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THE CALENDAR FOR 1925–26

First Term

		1925	
Sept.	14	Monday	University entrance examinations begin.
Sept.	23	Wednesday	Academic year begins. Registration of new students.
			All special students in the College of Agriculture must first present themselves at the office of the Secretary, Roberts Hall, unless permission to register has previously been sent to them by the Registrar.
Sept.	24	Thursday	Registration of new students.
Sept.	25	Friday	Registration of old students.
Sept.	28	Monday	Instruction begins.
Oct.	16	Friday	Last day for payment of tuition.
Nov.	4	Wednesday	Registration of winter-course students.
Nov.	—	Thursday	Thanksgiving recess.
Dec.	19	Sat. 1 p. m.	Instruction ends in regular and winter courses. } Christmas recess.
		1926	
Jan.	4	Mon. 8 a. m.	Instruction resumed in regular and winter courses. } Christmas recess.
Jan.	11	Monday	Birthday of Ezra Cornell. Founder's Day.
Jan.	25	Monday	Term examinations begin.

Second Term

Feb.	5	Friday	} Registration of all students.
Feb.	6	Saturday	} Registration of all students.
Feb.	8	Mon. 8 a.m.	Instruction begins in regular courses.
Feb.	8–13		Farmers' Week.
Feb.	12	Friday	Instruction ends in winter courses.
Mar.	1	Monday	Last day for payment of second-term tuition.
Apr.	3	Sat. 1 p. m.	Instruction ends. } Spring recess.
Apr.	12	Mon. 8 a. m.	Instruction resumed. } Spring recess.
May	31	Monday	Term examinations begin.
June	14	Monday	Fifty-eighth Annual Commencement.

STAFF OF INSTRUCTION, RESEARCH, AND EXTENSION

Livingston Farrand, A.B., M.D., L.H.D., LL.D., President of the University.
Albert Russell Mann, B.S.A., A.M., Dean of the College of Agriculture.*
Cornelius Betten, Ph.D., D.Sc., Director of Resident Instruction and Acting Dean.
Roscoe Wilfred Thatcher, B.S., M.A., D.Agr., Director of Experiment Stations.
Carl Edwin Ladd, Ph.D., Director of Extension.
Robert Pelton Sibley, M.A., L.H.D., Professor and Secretary.
Olin Whitney Smith, B.S., Assistant Secretary.
Willard Waldo Ellis, A.B., LL.B., Librarian.
George Wilson Parker, Managing Clerk.

Isaac Phillips Roberts, M.Agr., Professor of Agriculture, Emeritus.
John Henry Comstock, B.S., Professor of Entomology and General Invertebrate Zoology, Emeritus.
John Lemuel Stone, B.Agr., Professor of Farm Practice, Emeritus.
Liberty Hyde Bailey, M.S., LL.D., Litt.D., Ex-Dean, Professor, Emeritus.
Whitman Howard Jordan, LL.D., Professor of Animal Nutrition, Emeritus.
Mrs. Anna Botsford Comstock, B.S., Professor of Nature Study, Emeritus.
Wilford Murry Wilson, M.D., Professor of Meteorology, Emeritus.
Henry Hiram Wing, M.S. in Agr., Professor of Animal Husbandry.
Thomas Lyttleton Lyon, Ph.D., Professor of Soil Technology.
James Edward Rice, B.S.A.., Professor of Poultry Husbandry.
George Walter Cavanaugh, B.S., Professor of Agricultural Chemistry.
George Nieman Lauman, B.S.A., Professor of Rural Economy.
Herbert Hice Whetzel, M.A., Professor of Plant Pathology.
George Frederick Warren, Ph.D., Professor of Agricultural Economics and Farm Management.
William Alonzo Stocking, M.S.A., Professor of Dairy Bacteriology.
Ralph Sheldon Hosmer, B.A.S., M.F., Professor of Forestry.
James George Needham, Ph.D., Litt.D., Professor of Entomology and Limnology.
Rollins Adams Emerson, D.Sc., Professor of Plant Breeding.
Harry Houser Love, Ph.D., Professor of Plant Breeding.
Donald Reddick, Ph.D., Professor of Plant Pathology.
George Alan Works, B.Ph., M.S. in Agr., Ed.D., Professor of Rural Education.
James Adrian Bizzell, Ph.D., Professor of Soil Technology.
Glenn Washington Herrick, B.S.A., Professor of Economic Entomology.
Howard Wait Riley, M.E., Professor of Rural Engineering.
Harold Ellis Ross, M.S.A., Professor of Dairy Industry.
Hugh Charles Troy, B.S.A., Professor of Dairy Industry.
Samuel Newton Spring, B.A., M.F., Professor of Silviculture.
Karl McKay Wiegand, Ph.D., Professor of Botany.
Arthur Bernard Recknagel, B.A., M.F., Professor of Forest Management and Utilization.
Merritt Wesley Harper, M.S., Professor of Animal Husbandry.
Cyrus Richard Crosby, A.B., Extension Professor of Entomology.
Elmer Seth Savage, Ph.D., Professor of Animal Husbandry.
Edward Albert White, B.Sc., Professor of Floriculture and Ornamental Horticulture.
Alvin Casey Beal, Ph.D., Professor of Floriculture.
Herbert Andrew Hopper, B.S.A., M.S., Extension Professor of Animal Husbandry.
Edward Sewall Guthrie, Ph.D., Professor of Dairy Industry.
William Charles Baker, B.S.A., Professor of Drawing.
Mortier Franklin Barrus, Ph.D., Extension Professor of Plant Pathology.
Oskar Augustus Johannsen, Ph.D., Professor of Entomology.
Clyde Hadley Myers, Ph.D., Professor of Plant Breeding.

*Absent on leave.

Bristow Adams, B.A., Professor in Extension Service, Editor, and Chief of Publications.
Dick J. Crosby, M. S., Professor in Extension Service.
Asa Carlton King, B.S.A., Professor of Farm Practice and Farm Superintendence.
George Abram Everett, A.B., LL.B., Professor of Extension Teaching.
Lewis Knudson, Ph.D., Professor of Botany.
E. Gorton Davis, B.S., Professor of Landscape Architecture.
Ralph Wright Curtis, M.S.A., Professor of Ornamental Horticulture.
Harry Oliver Buckman, Ph.D., Professor of Soil Technology.
Ralph Hicks Wheeler, B.S., Professor in Extension Service.
Paul Work, Ph.D., Professor of Vegetable Gardening.
John Bentley, jr., B.S., M.F., Professor of Forest Engineering.
Paul J. Kruse, Ph.D., Professor of Rural Education.
Rolland Maclaren Stewart, Ph.D., Professor of Rural Education.
James Ernest Boyle, Ph.D., Professor of Rural Economy.
Ezra Dwight Sanderson, Ph.D., Professor of Rural Social Organization.
Homer Columbus Thompson, M.S., Professor of Vegetable Gardening.
William Joseph Wright, M.S., Extension Professor of Rural Education and State Leader of Junior Extension.
Cora Ella Binzel, Professor of Rural Education.
Byron Burnett Robb, M.S. in Agr., Professor of Rural Engineering.
James Kenneth Wilson, Ph.D., Professor of Soil Technology.
Edmund Louis Worthen, M.S.A., Extension Professor of Soil Technology.
Julian Edward Butterworth, Ph.D., Professor of Rural Education.
James Chester Bradley, Ph.D., Professor of Entomology and Curator of Invertebrate Zoology.
George Charles Embody, Ph.D., Professor of Aquiculture.
Arthur Johnson Eames, Ph.D., Professor of Botany.
John Hall Barron, B.S.A., Extension Professor of Field Crops.
Gad Parker Scoville, B.S. in Agr., M.A., Professor of Farm Management.
Leonard Amby Maynard, Ph.D., Professor of Animal Husbandry.
Montgomery Robinson, Litt.B., B.S., Professor in Extension Service.
Arthur John Heinicke, Ph.D., Professor of Pomology.
Edward Gardner Misner, Ph.D., Professor of Farm Management.
William Irving Myers, Ph.D., Professor of Farm Finance.
Theodore Hildreth Eaton, Ph.D., Professor of Rural Education.
Walter Warner Fisk, M.S. in Agr., Professor of Dairy Industry.
James Duncan Brew, M.S., Extension Professor of Dairy Industry.
Doak Bain Carrick, Ph.D., Professor of Pomology.
Lester Wayland Sharp, Ph.D., Professor of Botany.
Joseph Oskamp, B.S. in Agr., Extension Professor of Pomology.
Hugh Daniel Reed, Ph.D., Professor of Zoology.
Harry Morton Fitzpatrick, Ph.D., Professor of Plant Pathology.
Otis Freeman Curtis, Ph.D., Professor of Botany.
Louis Melville Massey, Ph.D., Professor of Plant Pathology.
Axel Ferdinand Gustafson, Ph.D., Extension Professor of Soil Technology.
E. Laurence Palmer, Ph.D., Professor of Rural Education.
Philip Henry Wessels, M.S., Research Professor of Vegetable Gardening.
Frank Ashmore Pearson, Ph.D., Professor of Marketing.
Robert Matheson, Ph.D., Professor of Economic Entomology.
John Clarence McCurdy, B.S., C.E., Professor of Rural Engineering.
Gustave Frederick Heuser, Ph.D., Professor of Poultry Husbandry.
Laurence Howland MacDaniels, Ph.D., Professor of Pomology.
Gilbert Warren Peck, M.S.A., Extension Professor of Pomology.
Emery N. Ferriss, Ph.D., Professor of Rural Education.
Frederick Gardner Behrends, B.S., Extension Professor of Rural Engineering.
Bruce Lee Melvin, M.S., Ph.D., Acting Professor of Rural Social Organization.
Ralph Almon Felton, Ph.B., M.A., Extension Professor of Rural Social Organization.
James Morgan Sherman, M.S., Ph.D., Professor of Dairy Industry.

Frank Pores Bussell, Ph.D., Professor of Plant Breeding.
Arno Herbert Nehrling, Professor of Floriculture.
Richard Alan Mordoff, Ph.D., Professor of Meteorology.
Everett Franklin Phillips, A.B., Ph.D., Professor of Apiculture.
Paul Francis Sharp, Ph.D., Professor of Dairy Chemistry.
Arthur Augustus Allen, Ph.D., Professor of Ornithology.
Alpheus Mansfield Goodman, B.S.A., Extension Professor of Rural Engineering.
Albert Hazen Wright, Ph.D., Professor of Zoology.
Loren Clifford Petry, Ph.D., Professor of Botany.
Luther Lee Bernard, Ph.D., Acting Professor of Rural Social Organization (first term).
Clyde B. Moore, Ph.D., Professor of Rural Education.
Harold Eugene Botsford, B.S., Extension Professor of Poultry Husbandry.
Jay Coryell, B.S. in Agr., County Agent Leader.
Charles Arthur Taylor, Assistant County Agent Leader.
Lloyd R. Simons, B.S.A., Assistant County Agent Leader.
Earl Alvah Flansburgh, B.S., Assistant County Agent Leader.
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Henry William Schneck, B.S., M.S.A., Assistant Professor of Vegetable Gardening.
Earle Volcart Hardenburg, Ph.D., Assistant Professor of Vegetable Gardening.
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Roy Glenn Wiggans, Ph.D., Assistant Professor of Plant Breeding.
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Clarence Vernon Noble, Ph.D., Assistant Professor of Farm Management.
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Louis Michael Roehl, B.S., Assistant Professor of Farm Shop.
Cedric Hay Guise, B.S., M.F., Assistant Professor of Forest Management.
Robert Byron Hinman, M.S., Assistant Professor of Animal Husbandry.
Walter H. Burkholder, Ph.D., Assistant Professor of Plant Pathology.
Benjamin Percy Young, Ph.D., Assistant Professor of Zoology.
Harvey Earl Thomas, M.S., Assistant Professor of Plant Pathology.
William Truman Crandall, B.S.A., M.S., Extension Assistant Professor of Animal Husbandry.
Herbert Press Cooper, M.S., Ph.D., Assistant Professor of Field Crops.
Herbert John Metzger, D.V.M., Extension Assistant Professor of Animal Husbandry.
Leland Eugene Weaver, B.S., Extension Assistant Professor of Poultry Husbandry.
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Frank Harrison Randolph, B.A., M.E., Assistant Professor of Institution Engineering.
Clara Louise Garrett, B.S., Assistant Professor of Drawing.
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Van Breed Hart, Ph.D., Extension Assistant Professor of Farm Management.
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Leland Spencer, Ph.D., Assistant Professor of Marketing.
Myers Peter Rasmussen, Ph.D., Assistant Professor of Marketing.
Harry Albert Ross, Ph.D., Assistant Professor of Marketing.
Milton Lyle Holmes, B.A., M.B.A., Acting Assistant Professor of Business Management.

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Joshua Alban Cope, M.F., Extension Assistant Professor of Forestry.
Leo Chandler Norris, Ph.D., Assistant Professor of Poultry Husbandry.
Walter Van Price, Ph.D., Assistant Professor of Dairy Industry.
Donald Stuart Welch, Ph.D., Assistant Professor of Plant Pathology.
Karl Hermann Fernow, Ph.D., Extension Assistant Professor of Plant Pathology.
Edwin Fraser Hopkins, Ph.D., Assistant Professor of Botany.
Myron Slade Kendrick, Ph.D., Assistant Professor of Rural Economy.
Adelin Starky White, M.A., Acting Assistant Professor of Rural Education.
Paul Rexford Young, M.S., Assistant State Leader of Junior Extension.
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Frank Bonar Howe, M.S., Soil Surveyor.
Daniel Parrish Witter, Adviser in Institute Extension.
Erl Bates, M.D., Adviser in Indian Extension.
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Winfred Enos Ayres, Extension Instructor in Dairy Industry.
Lewis Merwin Hurd, Extension Instructor in Poultry Husbandry.
Walter Gernet Krum, Extension Instructor in Poultry Husbandry.
Lawrence Paul Wehrle, Ph.D., Research Instructor in Entomology.
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Luther Shirley West, Ph.D., Instructor in Parasitology.
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William Trowbridge Merrifield Forbes, Ph.D., Instructor in Entomology.
Burton Aaron Jennings, B.S., Instructor in Rural Engineering.
Edmund Ellsworth Vial, M.S., Instructor in Animal Husbandry.
George Eric Peabody, M.S., Instructor in Extension Service.
Robert Claud Bradley, A.B., B.S., M.S. in Agr., Instructor in Poultry Husbandry.
William Ernest Krauss, B.S., Instructor in Animal Husbandry.
Charles Kelley Powell, Ph.D., Instructor in Poultry Husbandry.
Roberts Bellows Willson, B.S., Extension Specialist in Apiculture.
Isaac Fults Hall, B.S., Instructor in Farm Management.
Edwin Raymond Hoskins, M.S.A., Instructor in Rural Education.
Edmond Adrian Perregaux, B.S., Instructor in Marketing.
Goldan Orlando Hall, M.S.A., Instructor in Poultry Husbandry.
John Franklin Booth, M.S.A., Instructor in Farm Management.
Mather Francis Thurston, A.B., Instructor in Marketing.
Grace Hall Griswold, Ph.D., Instructor in Entomology.
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Russell Cooper Miller, B.S.A., Analyst in Animal Husbandry.
Charles Edward Hunn, Instructor in Plant Propagation.
Mary Jones Fisher, A.M., Ph.D., Instructor in Zoology.
Amy Grace Mekeel, A.M., Instructor in Zoology.
Eleanor Clara McMullen, A.M., Instructor in Zoology.
Miles David Pirnie, B.S., Instructor in Ornithology.
Harry B. Alger, B.S., Instructor in Dairy Industry.
Cynthia Westcott, A.B., Instructor in Plant Pathology.
James Edward Knott, M.S., Instructor in Vegetable Gardening.
Paul Jones Chapman, B.S., Extension Instructor in Entomology.
Mary Eva Duthie, B.S., Extension Instructor in Rural Social Organization.
Paul Smith Prickett, M.S., Instructor in Dairy Bacteriology.

Randall Whitaker, B.S., Instructor in Dairy Industry.
Thomas Levingston Bayne, jr., M.S., Instructor in Rural Education.
John Frederick Harriott, B.S., Instructor in Farm Management.
Irving Joslyn Call, B.S., Instructor in Farm Management.
Wayne Eyer Manning, A.B., Instructor in Botany.
Robert Donald Lewis, B.S., Extension Instructor in Plant Breeding.
Lawrence Moore Vaughan, B.S., Extension Instructor in Farm Management.
Albert Benjamin Genung, B.S., Extension Instructor in Farm Management.
Whiton Powell, A.B., Instructor in Marketing.
David Seaver Cook, B.S., Instructor in Extension Service.
May Margaret Mattson, B.S., Instructor in Rural Education.
John Edward Flynn, M.S., Instructor in Plant Pathology.
John Carl Huttar, B.S., Instructor in Poultry Husbandry.
Clifford Nicks Stark, M.A., Instructor in Dairy Industry.
Charles Ketchum Tucker, M.S.A., Instructor in Marketing.
Joseph Brackin Kirkland, B.S., Instructor in Extension Service.
Frank Josiah Walrath, B.S., Instructor in Rural Economy.
Arthur Lewis Pierstorff, A.B., Extension Instructor in Plant Pathology.
Dilworth Walker, M.S.A., Instructor in Marketing.
Norman Leon Cutler, B.A., Instructor in Entomology.
James Whaples Sinden, A.B., Instructor in Plant Pathology.
John Orval Ellsworth, M.S., Instructor in Rural Economy (first term).
George Reinhardt Kreisel, B.S., Instructor in Marketing.
George Bentley Webber, B.S., Instructor in Meteorology.
Paul Robert Needham, B.S., Instructor in Limnology.
Glenn Almer Bakkum, B.S., Instructor in Rural Social Organization.
John Peter Willman, M.S., Extension Instructor in Animal Husbandry.
Lillian A. Phelps, M.A., Instructor in Zoology.
Robert Grove Maxwell, B.S., Instructor in Animal Husbandry.
Ralph Dobbin Reid, B.S., Instructor in Farm Management.
Erwin Graue, B.S., Instructor in Rural Economy.
Frederick Maximilian Schmidt, Ph.D., Instructor in Marketing.
Earl Randles McNeil, B.S., Instructor in Marketing.
William Thomas Craig, Assistant in Cereal Investigations.*
Walton Isaac Fisher, Assistant in Plant Breeding Investigations.
Stewart Henry Burnham, B.S., Assistant Curator in Botany.
Cecil D. Schutt, Assistant in Animal Husbandry.
Fred Harrison Dennis, Assistant in Plant Breeding Investigations.
Theresa Marian Robinson, B.A., Assistant in Entomology.
Leah English, B.S., Analyst in Agronomy.
Samuel Eugene Alan McCallan, B.S.A., Assistant in Plant Pathology.
Fayette Elsworth Stephens, A.B., Assistant in Agronomy.
Virgil Norman Argo, B.S., Assistant in Biology.
Grace Sandhouse, M.A., Assistant in Entomology.
Henry Clayton Harris, A.B., Assistant in Agronomy.
Barbara McClintock, B.S., M.A., Assistant in Botany.
Chester Arthur Arnold, B.S., Assistant in Botany.
Robert Goldin, B.S., Assistant in Botany.
James Elwood Davis, B.S., Assistant in Forestry.
Paul Rufus Burkholder, A.B., Assistant in Botany.
Cyrus Benjamin Butler, Assistant in Aquiculture.
John Lupton Mecartney, B.S., Assistant in Pomology.
Harold Barrows Riley, M.S., Assistant in Agronomy.
Juan de Guzman Rodriguez, B.S., Assistant in Plant Breeding.
Everett Oertel, B.S., Assistant in Apiculture.
Paul Yashin, Assistant in Floriculture.
Gemma Jackson, B.A., Assistant in Botany.
Lawrence D. Mastin, Assistant in Plant Breeding Investigations.

*Absent on leave.

Carl Edward Frederick Guterman, B.S., Assistant in Plant Pathology.
Kenneth Gordon, M.A., Assistant in Biology.
Sid Robinson, B.S., Assistant in Entomology.
George Edward Romaine Hervey, B.S.A., Assistant in Entomology.
John Richard Greeley, A.B., Assistant in Zoology.
Neil Hotchkiss, M.S., Assistant in Botany.
Richard August Laubengayer, B.S., Assistant in Botany.
Robert Geib Foster, B.S., Assistant in Marketing.
Orion Ulrey, B.S., Assistant in Marketing.
Austin Lathrop Patrick, M.S., Assistant in Agronomy.
Dale Edmund Thomas, M.S., Assistant in Botany.
Robert Daniel Harwood, A.B., Assistant in Entomology.
Charles Alton Gillett, B.S., Assistant in Forestry.
Ralph Furness Wilcox, B.S., Assistant in Forestry.
Daniel Den Uyl, B.S., Assistant in Forestry.
Dana Jackson Leffingwell, B.A., Assistant in Ornithology.
James Gordon Horsfall, B.S., Assistant in Plant Pathology.
Alfred M. S. Pridham, B.S.A., Instructor in Floriculture.*

*Absent on leave.

GENERAL INFORMATION

FOUNDATION AND MAINTENANCE

Cornell University is composed of eight colleges and the Graduate School. One of these colleges is the College of Agriculture.

Cornell University was chartered by the Legislature in 1865, being founded on the Land-Grant Act of 1862. By the terms of the Land-Grant Act, teaching in agriculture has been from the first a regular part of the university enterprise. As in other States, the State Government has made large supplementary appropriations for the work in agriculture. In 1904 the Legislature of the State of New York made an appropriation of $250,000 for the erection of buildings for the College of Agriculture in Cornell University, with an additional appropriation for maintenance and operation, and established the College as a state institution under the title, "The New York State College of Agriculture at Cornell University." Before this time the State had established at Cornell University "The New York State Veterinary College;" and recently "The New York State College of Home Economics at Cornell University," formerly a department of the College of Agriculture, has been established as a third state college at Ithaca. In 1906 the Legislature passed an Administration Act, defining the purpose and the activities of the College of Agriculture thus: "The object of the said college of agriculture shall be to improve the agricultural methods of the state; to develop the agricultural resources of the state in the production of crops of all kinds, in the rearing and breeding of livestock, in the manufacture of dairy and other products, in determining better methods of handling and marketing such products, and in other ways; and to increase intelligence and elevate the standards of living in the rural districts. For the attainment of these objects the college is authorized to give instruction in the sciences, arts, and practices relating thereto, in such courses and in such manner as shall best serve the interests of the state; to conduct extension work in disseminating agricultural knowledge throughout the state by means of experiments and demonstrations on farms and gardens, investigations of the economics and social status of agriculture, lectures, publication of bulletins and reports, and in such other ways as may be deemed advisable in the furtherance of the aforesaid objects; to make researches in the physical, chemical, biological, and other problems of agriculture, the application of such investigations to the agriculture of New York, and the publication of the results thereof." Since 1906 the State has provided many additional buildings and has made increasingly large appropriations for maintenance and operation. The College has been designated by the State as the recipient of the funds appropriated to the State by the Federal Government under the Morrill and Smith-Lever Acts. It shares with the New York Agricultural Experiment Station at Geneva the funds derived from the Hatch and Adams Acts, and with other institutions those devoted to teacher training under the Smith-Hughes Act.

THE BUILDINGS

The buildings erected under the enactment of 1904 were first occupied in June, 1907. The central group then erected consisted of a main administrative and classroom building, connected by covered loggias with the Dairy Building, now East Roberts, on the east and with Stone Hall, now used by the Department of Botany and the College Library, on the west. Subsequently, the Legislature provided for the erection of two large barns, a greenhouse, a forestry building, a poultry husbandry building, a soils building, an auditorium, a classroom building and a stock-judging building for animal husbandry, an extension of the greenhouse range, several small poultry buildings, a sheep barn, a swine barn, a farm shop and tool shed, an addition to the cafeteria in the home economics building, an insectary, and a heating plant. There are, in addition, the frame buildings occupied by the Departments of Rural Engineering and Floriculture and Ornamental Horticulture, a fish-breeding house in Cascadilla Creek, a seed-storage house, a cold-storage and packing house, and other small buildings on the farms. In 1920, the State authorized the College to plan a further development of its building program involving an expenditure of $3,000,000. Under this building plan $500,000 was appropriated in 1920 for a new dairy building, and in 1922 provision was made for its equipment. The building came into use in the fall of 1923. A further appropriation of $500,000 was made in 1923, and this will be used for beginning the plant industry building and the library and museum, and for making various changes preparatory thereto, including the erection of a new greenhouse range.

THE FARMS

The College of Agriculture has 1183 acres of land and rents 150 additional acres, making a total of 1333 acres under college management. These farms are run not for commercial but for educational purposes, and the practices are therefore modified to meet the varied demands of the institution.

Land in the vicinity of the College is very broken, abounding in hills and dales, brooks and gorges. In consequence, little more than one-half of the total area is now available for tillage. Of the 1333 acres, 792 are classified as arable, 272 as pasture, 222 as wood and waste, and 47 are devoted to buildings, lots, and gardens.

Part of the tillable area has been assigned to departments, as follows: Agronomy, 32 acres; Animal Husbandry, 16 acres; Floriculture and Ornamental Horticulture, 20 acres; Plant Breeding, 56 acres; Pomology, 64 acres; Poultry Husbandry, 72 acres; Vegetable Gardening, 25 acres; and there are left to the Office of Farm Practice and Farm Superintendence 507 acres on which to conduct the regular farm operations. Of the other areas, the Department of Animal Husbandry has the use of all the pasture land; the Department of Forestry

administers (now for over a decade) 80 acres of wood land under systematic forest management; and the Department of Entomology uses about 5 acres of waste land for a fish hatchery.

The soil of the college farms is heavy, nearly all of it being Dunkirk clay loam. A few fields at the extreme southeastern corner are Volusia stony loam. The Dunkirk clay loam is entirely unsuited to potatoes and is not well adapted to corn, but will grow fair crops of corn if heavily manured. It is well adapted to wheat, oats, timothy, and clover. The Volusia stony loam, when well drained and freed from stones, is well adapted to corn and potatoes. The recently acquired areas lack both these improvements.

THE COLLEGE LIBRARIES

The library facilities of the College of Agriculture include: a large collection of books and periodicals on agriculture, animal husbandry, botany, horticulture, forestry, entomology, and other kindred subjects, contained in the University Library and numbering about thirty thousand volumes; the Agricultural College Library in Stone Hall, with a working and reference collection of approximately forty thousand bound volumes and a large number of bulletins, reports, and other pamphlets in unbound form; and various small departmental collections for laboratory and office use. In addition to these, the Agricultural College possesses the Craig horticultural library, gift of the widow of the late Professor John Craig, consisting of about three hundred volumes and considered to be one of the best private collections in the United States. The Department of Animal Husbandry has a large and rapidly increasing collection of herd books, registers, and the like, for the use of its instructing staff and its students. Altogether, about eighty thousand volumes are available for the instructing staff and the students of the College of Agriculture. Wherever housed, the books are regularly catalogued at the University Library.

All these libraries are likewise provided with the principal periodicals relating to agriculture and kindred subjects. In the University Library are to be found the files and current numbers of the leading foreign periodicals, especially those of a purely scientific character and those used chiefly for research. The Agricultural Library carries on its shelves over five hundred periodicals of various kinds for the use of students; these include the principal agricultural, horticultural, and stock-raising journals of the United States and Canada, together with many from foreign countries. The Entomological Library is supplied with the leading periodicals relating to general and economic entomology. In additon to these, many of the departments receive periodicals for the use of instructors and students, and the Departments of Agricultural Economics and Farm Management, Animal Husbandry, Dairy Industry, Plant Pathology, and Poultry Husbandry maintain small reading rooms of their own.

All the books of the Agricultural College Library are in reserve for reference purposes only; students are allowed to draw them for home use only when the library is closed over night and over Sunday. In order to afford the greatest possible opportunity for using the books, the Agricultural College Library is open from eight in the morning until ten o'clock at night every day of the week during the college year except Saturday, when it is closed at six o'clock in the afternoon.

PAYMENTS TO THE UNIVERSITY

Tuition

Tuition is free to the following classes of students:

(1) Students pursuing full, special, or short courses in the New York State College of Agriculture, the New York State Veterinary College, or the New York State College of Home Economics (except the course in Hotel Administration) and such students in the Graduate School as are taking their major work in these state colleges, who at the beginning of the college year are, and for at least twelve months prior thereto have been, bona-fide residents of the State of New York, are exempt from the payment of tuition fees; provided, however, that no student shall be allowed to transfer from any such course to another course wherein tuition is charged without first paying the regular tuition fees for the hours for which he may receive credit in the latter course.

(2) Students who hold the State Scholarships in Cornell University provided for by Section 1037 of the New York State Education Law of 1910.

Students in Agriculture who are not exempt under any of the above provisions are required to pay tuition as follows: For the regular year, $200, except in the Graduate School, where the tuition is $75; in the Summer Session, $50; in the Summer School in Agriculture, $50; in the Winter Courses in Agriculture, $25.

The tuition fee of $200 is payable in installments of $110 at the beginning of the first term and $90 at the beginning of the second term, but a student registered only for the second term of the academic year is required to pay at the rate of the first term.

Tuition and other fees become due when the student registers. The University allows twenty days of grace after the last registration day of each term of the regular session. The last day of grace is generally printed on the registration coupon which the student is required to present at the Treasurer's office. Any student who fails to pay his tuition charges, other fees, and other indebtedness to the University, or who, if entitled to free tuition, fails to claim it at the Treasurer's office and to pay his fees and other indebtedness, within the prescribed period of grace, is thereby dropped from the University unless the Treasurer has granted him an extension of time to complete payment. The Treasurer is permitted to grant such an extension when, in his judgment, the circumstances of a particular case warrant

his doing so. For any such extension the student is assessed a fee of $5 for the first week and $2 additional for each subsequent week in which the whole or any part of the debt remains unpaid but the assessment in any case is not more than $15. The assessment may be waived in any instance for reasons satisfactory to the Comptroller and the Registrar, when such reasons are set forth in a written statement.

The rules governing the rate of tuition in cases of withdrawal during the term or of registration late in the term are stated in the General Circular of Information.

Any tuition or other fee may be changed by the Board of Trustees to take effect at any time without previous notice.

Other Fees

A matriculation fee of $10 is required of every student upon entrance into the University. This fee must be paid at the time of registration. A new undergraduate student who has made the required deposit of $25 with the Treasurer does not make an additional payment of the matriculation fee, because the Treasurer draws on the deposit for this fee.

An infirmary fee of $5 a term is required, at the beginning of each term, of every student. For a statement of the privileges given in return for this fee, see the General Circular of Information.

A locker fee is required, at the beginning of each term, of every undergraduate student. It is $2 a term for men and $1 a term for women. Payment of this fee entitles the student either to the use of the gymnasium and the university playgrounds, and to the use of a locker, with the use of bathing facilities and towels, in the gymnasium, the New York State Drill Hall, or the Schoellkopf Memorial Building; or else to the use of the women's gymnasium, recreation rooms and playgrounds, and to the use of a locker if that is necessary.

A graduation fee is required, at least ten days before the degree is to be conferred, of every candidate for a degree. For a first, or baccalaureate degree, the fee is $10; for an advanced degree it is $20. The fee will be returned if the degree is not conferred.

Laboratory fees. In courses of study that require work in laboratory, shop, or drafting room, or field work, a fee is charged to cover the cost of material used by the student.

Deposits. In some courses, particularly in Chemistry, the student is required to make in advance, at the office of the Treasurer of the University, a deposit of money to cover the cost of material to be used and supplies to be consumed by him in the course of the term; accounts are kept and charges are entered against the deposit; at the end of the term any balance remaining of the deposit is returned to the student.

Payment of the fee or of the deposit. Every person taking work in a laboratory or in a course wherein a laboratory fee is charged or wherein

a deposit is required must pay to the Treasurer of the University the laboratory fee or the deposit as directed by the laboratory card which he will receive.

An allowance of $30 a year will probably cover laboratory fees for most students. Books, stationery, and apparatus may use as much more. The average cost of board and lodging in Ithaca is rather above than below $12 a week; $10 is perhaps the lowest practicable allowance.

Rules Governing Minor Delinquencies

Every student is held personally responsible for any injury done by him to any of the University's property.

Assessments, charged to the student's account and payable at the Treasurer's office, are levied upon the student in certain circumstances, under the following rules of the University:

A student desiring to be reinstated after being dropped from the University for delinquency in scholarship or in conduct shall first pay a fee of $25.

A matriculated student desiring to register after the close of registration day shall first pay a fee of $5.

A student desiring to file his registration of studies after the date set by this college for filing the same shall first pay a fee of $2.

A student desiring to take an examination or other test for the removal of a term condition (including the making up of a mark of "absent" or "incomplete") shall first pay a fee of $2 for each examination or other test.

A student desiring to make an appointment for the required medical examination or conference after twenty days from the last registration day of the term shall first pay a fee of $2.

For reasons satisfactory to the proper authority, any of the above-mentioned assessments (except that levied for examination or other test to remove a condition) may be waived in any individual case if the student's failure to comply with the regulation was due to ill health or to any other reason beyond his control.

RESIDENTIAL HALLS

The University has six residential halls for men students, situated on the campus and furnishing accommodations for about four hundred and eighty men. For particulars, address the University Comptroller, Ithaca, New York. There are, also, many private boarding and lodging houses near the university campus. In these the cost of board and furnished room, with heat and light, varies from $10 to $15 a week. By the formation of clubs, students are sometimes able to reduce their expenses for room and board. Cafeterias are maintained by the University in Cascadilla Hall and Baker Court, and by the College of Agriculture in the Home Economics Building, where meals may be obtained at reasonable prices.

Before engaging rooms, students should carefully examine sanitary conditions and should particularly insist on satisfactory and sufficient fire escapes. The University publishes and distributes a list of approved lodging houses. This list is ready for distribution on August 15. New students are advised to come to Ithaca a few days in advance of the beginning of their university duties, in order that they may have ample time to procure room and board before the opening of the academic year. The Freshman Advisory Committee offers its assistance to new students in the selection of lodging and boarding houses.

The residential halls for women students are Sage Hall and Prudence Risley Hall. In these buildings the total cost of board, laundry, and rent of furnished rooms, with heat and light, is $480. The halls are heated by steam and lighted by electricity. The University Dean of Women has jurisdiction over all women students in the University, and women students are not permitted to board and lodge outside of the halls for women except in houses approved by the Dean and subject to her direction. Prospective women students should write to the Dean of Women for information concerning any matters in which they may need assistance. Dormitory facilities for women are inadequate, and prospective students desiring such accommodation are urged to make early application. Inquiries in regard to board and rooms in the women's halls should be addressed to the Manager of Residential Halls, Sage College, Ithaca.

SCHOLARSHIPS

The State University Scholarships

Under Chapter 292 of the Laws of 1913, as amended by Chapter 502, Laws of 1920, and Chapter 714, Laws of 1923, the State of New York maintains scholarships, five of which are awarded each county annually for each assembly district therein. Each of these scholarships entitles the holder to $100 for each year while he is in attendance upon an approved college in this State during a period of four years. These are called the State University Scholarships. At Cornell they are commonly known as the State Cash Scholarships, to distinguish them from the State Free-Tuition Scholarships in this University. They are awarded by the State Commissioner of Education at Albany, to whom applications should be made for any information about the conditions of award, or for any information about the rules of administration.

The University Undergraduate Scholarships

Eighteen University Undergraduate Scholarships, each continuing for two years and having an annual value of $200, are offered each year to members of the incoming freshman class. The award is made on the basis of a special competitive examination held in Ithaca in September, between the period of the entrance examinations and the opening of the University. Every candidate for a University Under-

graduate Scholarship must have satisfied in full the entrance requirements of that college of the University which he proposes to enter. See the General Circular of Information for the rules under which these scholarships are awarded.

The Roberts Scholarships

The Roberts Scholarship Fund, a gift of the late Dr. Charles H. Roberts of Oakes, Ulster County, New York, provides five scholarships, each retainable for one year. As expressed by the founder, the purpose of these scholarships is to furnish financial assistance to students in the College of Agriculture who are of good moral character, who show native ability, tact, and application, and who are in need of such assistance, especially students who come from rural districts. The award is made after the close of the first term of each year. Application blanks and copies of the regulations may be obtained at the office of the Secretary of the College of Agriculture. All applications must be on the official blanks, which, with all other information, must be filed with the Secretary of the College before February 1. The value of each scholarship is $320.

Scholarships for Nonresidents

There are available ordinarily ten scholarships carrying free tuition to nonresidents of New York who are especially worthy of aid.

Other Scholarships

A description of other scholarships open under certain conditions to undergraduates in the College of Agriculture will be found in the General Circular of Information.

PRIZES

The Eastman Prizes for Public Speaking

With the object of developing qualities of personal leadership in rural affairs, Mr. A. R. Eastman, of Waterville, New York, established annual prizes, the first of $100 and the second of $20, for public speaking on country-life subjects in the College of Agriculture. These prizes are designated the Eastman Prizes for Public Speaking. Competition is open to any regular or special student. The contest takes place in February.

The Ring Memorial Prizes

By bequest of Mr. Charles A. Ring, of Niagara County, New York, a first prize of approximately $30 and a second prize of approximately $20 have been established, to be awarded to undergraduate students in agriculture who, in essays giving reviews of the literature on problems in floriculture, vegetable gardening, or pomology, show the greatest ability to evaluate scientific evidence. The essays must be submitted to the Secretary of the Faculty of Agriculture by noon on May 1.

The Stewart Prize for the Production of Clean Milk

With the object of increasing the interest in the production of clean milk, Mr. S. L. Stewart, of Brookside Farm, Newburgh, New York, has offered for the coming year a prize of $50 to be divided among students participating in a clean-milk contest. This money is to be apportioned by the Department of Dairy Industry, and the regulations governing the contest are to be fixed by the department. Definite announcement concerning the contest will be made to students taking course 10, in dairy industry, soon after the course opens in February.

The Charles Lathrop Pack Prize

The Charles Lathrop Pack Prize, the income on a gift of $1000, is awarded annually by the staff of the Forestry Department to that member of the senior class of professional forestry students who has maintained the best all-around record during his college course. In selecting the recipient, the staff is guided not only by scholastic standing, but as well by the general attitude displayed in classroom and laboratory and in the field and in matters that have to do in general with furthering the welfare of the Department of Forestry.

The Charles Lathrop Pack Foundation Forestry Prize

The Charles Lathrop Pack Foundation Forestry Prize consists of the income on a fund of $1000, and is awarded annually in April for the best essay on forestry submitted by a professional forestry student. The purpose of the prize, as expressed by the donor, is "to aid in training foresters to write articles which will arouse in the public an interest in forestry and an appreciation of what forestry means to the country." The award is made by a committee appointed by the President of the University. The detailed regulations will be furnished by the Forestry Department or at the Secretary's Office. The essay must be deposited at the office of the head of the Department of Forestry by noon of April 15.

Alumni Prize

The Alumni Association of the College of Agriculture contributes an annual prize of $25 to be awarded at the close of the junior year to the student who has maintained the best scholastic record during his three years in the University, the award to be made by the Faculty of the College.

For information concerning other prizes offered in the University and open to competition of students in the College of Agriculture, see the special pamphlet on prizes, which may be obtained upon application to the Secretary of the University.

THE HONOR CODE IN EXAMINATIONS

Under a constitution proposed and adopted by the students, and approved by the University Faculty on March 9, 1921, all students of Cornell University are put upon their honor with respect to their conduct in examinations and in other tests of work by which they are earning academic credit. The students have made themselves responsible for maintaining the code. For the trial of charges of breach of honor they elect committees of their own—a central committee for the University, and a committee in each of the colleges. Every student is expected to do his share in upholding the code, not only by honorable conduct on his own part, but also by refusal to conceal or condone fraud on another's part. A fraud observed in any college should be reported to a member of the student honor committee of that college.

INFORMATION CONCERNING COURSES

The regular instruction in the College of Agriculture constitutes a course of four years, or eight terms, leading to the degree of bachelor of science. The requirements for graduation that are stated below apply to all students in this course and they are of such a nature as to give opportunity for following specialized interests under the guidance of faculty advisers.

From 70 to 80 per cent of the men graduates of the College go into agricultural pursuits. Besides farming, which is the most common occupation followed, there is a great range of related professional or technical vocations, for which the agricultural course offers training. Manufacturing dairy products, teaching agriculture, agricultural extension, work in agricultural experiment stations, and administrative work in farmers' organizations dealing in agricultural products and machinery may be cited as examples of these vocations. No special curricula are laid out for these specializations, but the student, with the help of a faculty adviser, can map out such a course within the general requirements for graduation.

In Forestry there are provided such courses as are needed by farmers for the proper management of farm woodlots, and a professional course is outlined on pages 47–48.

Aside from the four-years course, there is a twelve-weeks winter course not giving credit toward a degree; a six-weeks summer school designed especially for teachers, school principals, and superintendents; and a special school of biology held in connection with the summer school. Circulars describing these various courses may be obtained on application to the Secretary.

Inquiries regarding graduate work in Agriculture should be addressed to the Dean of the Graduate School.

THE REGULAR FOUR-YEARS COURSE

Men who are candidates for admission to the regular, or four-years, course must be at least sixteen years of age; women must be at least seventeen years of age. They must have certificates of good moral character; and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal. Students are admitted on examination, or on presenting acceptable credentials of the University of the State of New York, or on acceptable school certificates.

By action of the Board of Trustees of Cornell University, all students matriculating in the University after September 1, 1925, must present a satisfactory certificate of vaccination; this certificate to be considered satisfactory only if it certifies to a successful vaccination within five years or certifies that at least three unsuccessful attempts have been made within the same period.

Prospective students who have neither lived on farms nor had considerable practical experience in agriculture are urged to spend at least one

year on a well-managed farm in order to familiarize themselves with common farm affairs and operations before entering the College. This experience is necessary in order to meet the farm-practice requirement (pages 22 and 43).

The Application for Admission

Any prospective undergraduate student intending to register in the University at Ithaca for the first term of the academic year must apply for registration not later than August 1 of that year, and the application must be accompanied by a deposit of twenty-five dollars. Checks should be made payable to Cornell University and sent to the Treasurer. An application received after August 1 may be accepted if, in the judgment of the Faculty concerned, there is adequate provision for the student's instruction. If a student completes his registration for the first term, the deposit will be credited to his account. If a prospective student whose application and deposit have been accepted fails to complete his entrance requirements, he is entitled to a refund of the deposit in excess of accrued charges. If, for any other reason, an applicant fails to enter the University at the beginning of the term, any balance above charges accrued may, at the discretion of the Comptroller and the Registrar, be refunded to him. Such a refund will generally be made if the vacancy caused by the student's withdrawal is filled.

Candidates for admission must file their credentials and obtain permits for any necessary entrance examinations at the University Registrar's office, Morrill 18. The results of examination may be ascertained from the Registrar.

Entrance Requirements for the Four-Years Course

The subjects that may be offered for admission to Agriculture are named in the following list; the figure in parenthesis following each subject indicates its value in entrance units and shows the maximum and the minimum amount of credit allowed in the subject. A unit represents five recitations a week for one year in a study.

1a.	English No. 1	(1½)	4d.	Fourth Year German	(1)
1b.	English No. 2	(1½)	5a.	First Year French	(1)
1c.	English (elective)	(1)	5b.	Second Year French	(1)
2a.	First Year Greek	(1)	5c.	Third Year French	(1)
2b.	Second Year Greek	(1)	5d.	Fourth Year French	(1)
2c.	Third Year Greek	(1)	6a.	First Year Spanish	(1)
3a.	First Year Latin	(1)	6b.	Second Year Spanish	(1)
3b.	Second Year Latin	(1)	6c.	Third Year Spanish	(1)
3c.	Third Year Latin	(1)	6d.	Fourth Year Spanish	(1)
3d.	Fourth Year Latin	(1)	7a.	First Year Italian	(1)
4a.	First Year German	(1)	7b.	Second Year Italian	(1)
4b.	Second Year German	(1)	7c.	Third Year Italian	(1)
4c.	Third Year German	(1)			

8a.	Ancient History	(½-1)	11.	Chemistry	(1)
8b.	Modern History	(½-1)	12.	Physical Geography	(½-1)
8c.	American History, Civics	(½-1)	13.	Biology*	(1)
8d.	English History	(½-1)	14.	Botany*	(½-1)
9a.	Elementary Algebra	(1)	14a.	Zoology*	(½-1)
9b.	Intermediate Algebra	(½)	15.	Bookkeeping†	(½-1)
9c.	Advanced Algebra	(½)	16.	Agriculture including Home Economics†	(½-4)
9d.	Plane Geometry	(1)	17.	Drawing	(½-1)
9e.	Solid Geometry	(½)	18.	Manual Training	(½-1)
9f.	Plane Trigonometry	(½)	19.	Any high-school subject or subjects not already used	(½-1)
9g.	Spherical Trigonometry	(½)			
10.	Physics	(1)			

For admission to the New York State College of Agriculture, an applicant must offer either A or B, as follows:

A. Fifteen units, arranged as follows: English (3), history (1), elementary algebra (1), plane geometry (1), foreign language (3 units in one language or 2 units in each of two), elective (6 or 5). Solid geometry and plane trigonometry are recommended among the elective units for students entering the course in forestry.

B. Of diplomas authorized by the Board of Regents prior to 1921, either (1) The Arts College Entrance Diploma, (2) the Science College Entrance Diploma, or (3) the Academic Diploma in Agriculture or in Homemaking issued by the Board of Regents of the University of the State of New York, or evidence of equivalent training.

If an applicant holding one of these last-named diplomas does not present three units of foreign language, he must elect an equivalent amount of work in the University in one or more of the following subjects: foreign language, English, mathematics, philosophy, psychology, history, economics, political and social science.

Requirements for Admission of Special Students

Opportunities are provided for persons who desire to pursue special studies. In order to be eligible for admission to special work, applicants must offer two full years of recent farm experience and must also either have fifteen units of entrance credits or be twenty-one years of age. In addition, an applicant for admission on the age requirement must satisfy the faculty of his ability to perform the work; and every applicant must satisfy the faculty of his bona-fide desire for special study. He will be required to present an honorable dismissal from the school last attended, certificates of good moral character, and other such certificates and letters as may be desired. The special work is designed to meet the needs of young men and young women from farms, who have not time for a four-years course, and of mature persons who desire to spend a brief period in specialized study. The work is not a definite "course," in the sense of having a program or a prescribed set of studies. The student chooses any of the agricultural "electives" that he is fitted to pursue. Admission as

*If an applicant has counted Biology (1), he may not also offer Botany (½) or Zoology (½).

†An applicant may offer not to exceed four units in vocational subjects under numbers 16, 18, and 19 combined. Bookkeeping may not be offered together with more than one of the subjects listed under 16, 17, and 18.

a special student does not admit to classes. The student is admitted to the various classes by the heads of the departments concerned, but only after admission to the College.

Special students must leave a record of their farm experience with the Department of Farm Practice during registration week.

Other Details of Admission

Other details as to subjects and methods of admission can be found in the General Circular of Information, which may be obtained on application to the Secretary of the University.

For admission to the freshman class and to advanced standing from other colleges and universities, all communications should be addressed to the Registrar of the University. Details can be found in the General Circular of Information.

For admission as a special student, communications should be addressed to the Secretary of the College of Agriculture.

For admission to graduate work and candidacy for advanced degrees, communications should be addressed to the Dean of the Graduate school.

Requirements for the Degree of Bachelor of Science

The requirements for the degree of bachelor of science are residence for eight terms, and, in addition to the prescribed work in the Departments of Physical Training and Military Science and Tactics, and in Hygiene and Preventive Medicine, the completion of one hundred and twenty hours of required and elective work, as outlined on pages 24–26.

All men students must satisfy the farm-practice requirement before the beginning of the senior year. This requirement is the equivalent of a year or more of actual farm work. In order to meet it, students should have a good working knowledge of horses, cattle, sheep, swine, poultry, crops, and machinery, and of the ordinary farm operations as they are practiced on a general farm. Exemption from this requirement is allowed only to students specializing in the Departments of Botany, Forestry, or Entomology. Application for such exemption must be made at the office of the Secretary of the College. Students should complete the requirement as early in their course as possible, since it is a prerequisite for admission to courses in farm management, pomology, and rural education.

Freshmen are required to attend, during their first term, a course of lectures designed to orient students in the life of the University and specifically to acquaint them with the scope and purpose of the courses of instruction in the College. The course requires attendance two hours a week and carries one hour of credit.

Credit toward a degree for work done in a preparatory school on subjects that may be offered for entrance to the University will be given to those students only who, in addition to satisfying all entrance

requirements, pass separate examinations in the subjects for which they seek college credit. These examinations will cover substantially the same ground as the university courses in the subjects. An applicant desiring a college-credit examination of this kind must apply to the Registrar as early as possible, and at least twenty-four hours before the first examination, specifying which fifteen units he intends to offer in satisfaction of the entrance requirements, and on what other entrance subjects he wishes to be examined for credit. In case he fails to satisfy the entrance requirements in any one or more of the units on which he proposes to enter, but passes the credit examination in any other subject or subjects, he may use the latter toward satisfying entrance requirements, but in that case he cannot also receive college credit for it. The college-credit examinations will be held September 14 to 19, 1925, on the dates set for the entrance examinations in the same subjects.

A student who receives at entrance twelve or more hours of credit in addition to the requirements for admission may be regarded as having satisfied one term of residence. Under no circumstances shall surplus entrance credit be accepted as the equivalent of more than one term.

A student who has satisfied the entrance requirements of this College and has afterwards completed in two or more summer sessions in Cornell University at least twelve hours of work in courses approved by the departments concerned, may be regarded as having thus satisfied one term of residence. Under no circumstances shall work done in summer sessions be accepted as the equivalent of more than two terms of residence. The maximum amount of credit toward the degree of bachelor of science which is allowed for the work of any one summer session is eight hours.

A student admitted to the College of Agriculture from another college in Cornell University, or from any other institution of collegiate rank, will be regarded as having completed the number of terms and hours to which his records entitle him, and will receive all the privileges of students who have completed the same number of terms and hours by residence in the College. In order, however, to obtain the degree of bachelor of science, he must have completed the prescribed subjects in the four-years course and the requisite number of elective hours in agricultural subjects. He must also have been in residence in the College of Agriculture for his last two terms and have completed not less than fifteen hours a term, of which two-thirds, at least, must be subjects taught by the staff of the College of Agriculture.

A student must register for at least twelve hours each term, and no new student may register for more than eighteen hours.

Regular students may take, at their discretion, during their four years, not to exceed twenty hours of elective subjects in courses offered in other colleges than Agriculture; but such elective subjects shall

not interfere with required or back work. Special students must take at least two-thirds of the entire work of each year from the agricultural subjects described on the following pages.

The Course Leading to the Degree of Bachelor of Science

REQUIRED COURSES: 45 HOURS

(Those required courses which are given in other colleges than Agriculture are described on pages 68-70.)

	Hours
Freshman Orientation Course	1
English	6
Botany, Biology, or Zoology	6
Chemistry or Physics	6
Physiology, one of the following	3
Physiology of Domestic Animals	
Human Physiology	
Plant Physiology	
Political Science	5
Botany, Zoology, Bacteriology, Chemistry, Physics, Geology, Physical Geography, Mathematics, Drawing, Biology, Psychology, Economics 1, 21a, 21b, 55a, 55b, 56b, 76a, 81, 89, Government 10	18

SPECIFIC REQUIREMENTS

Students who do not present chemistry for entrance are required to take chemistry.

Students who do not present physics for entrance are required to take physics.

Students who do not present geology or physical geography for entrance are required to take one of these subjects.

Professional students in forestry who do not offer solid geometry and plane trigonometry for entrance are required to take these subjects in their freshman year.

Not less than twenty-four hours of the required work is to be taken in the freshman year, including English, botany, biology or zoology, and physics or chemistry.

In the eighteen hours of optional science work listed above, applied science courses may not be counted. Thus photography and dairy bacteriology may not be included as physics and bacteriology for this requirement.

PREREQUISITES

Where an option of required courses is offered, consideration should be given to the prerequisites demanded by the elective courses to be taken subsequently.

Agronomy 1 is prerequisite for Floriculture and Ornamental Horticulture 121, Rural Engineering 122, and Vegetable Gardening 1 and 2.

Bacteriology is prerequisite for Agronomy 107 and Dairy Industry 102.

Botany 1 is prerequisite for further work in botany; for professional courses in forestry; for courses in plant breeding, plant pathology, and pomology; and for some of the courses in agronomy, floriculture, and vegetable gardening.

Botany 22 is prerequisite for forestry 141.

Botany 31 is prerequisite for professional courses in forestry, and for courses in floriculture and ornamental horticulture, plant breeding, pomology, and vegetable gardening.

Chemistry 101 is prerequisite for courses in agronomy, dairy industry, pomology, and vegetable gardening.

Chemistry 210 and 225 are prerequisite for Agronomy 105, 201, and 107, and recommended for Bacteriology 106 and Dairy Industry 101.

Drawing is prerequisite for Rural Engineering 102.

Economics 1 is prerequisite for Agricultural Economics 125, 141, 161, and 262, and Forestry 3.

Economics 55a is prerequisite for Rural Social Organization 205 and 108; Economics 55b, for Rural Social Organization 205.

Geology 100 is prerequisite for Agronomy 1.

ELECTIVE COURSES: 75 HOURS

The remainder of the work—seventy-five hours—is made up of electives to be taken under the following restrictions:

A student may take, at his discretion, during his four years, not to exceed twenty hours of elective subjects in courses offered in other colleges than Agriculture; but such elective subjects shall not interfere with required or back work. The remainder of his elective work must be chosen from the agricultural subjects described on the following pages.

In selecting his course, the student must obtain the approval of a faculty adviser, preferably in the department in which he expects to specialize, who shall be chosen by the student at the beginning of the sophomore year. All students who are preparing for teaching are advised to consult a professor of rural education as well as their faculty adviser before filing their term schedules.

The following courses are open to freshmen, subject to the requirements stated above, provided, also, that prerequisites are satisfied and that acceptable equivalents have not been credited toward entrance:

Animal Husbandry 1, 2, 5, 10, 12, 13, 20.
Aquiculture 73.
Bacteriology 1, 2, 3, 4.
Bibliography 1, 2.
Biology 1.
Botany 1, 13.
Chemistry 101, 205, 210, 225, 875.
Dairy Industry 1, 102.
Drawing 1, 11.
English 1.

Entomology 11, 21, 31.
Floriculture and Ornamental Horticulture 1, 11, 43.
Forestry 1, 2, 4, 24, 53.
French 1, 3, 4a, 4b, 5a, 5b.
Geology 100, 101, 102, 200, 201, 311, 400.
German 1, 1a, 3, 3a, 4, 5, 8.
Greek 1a, 1b, 2a, 2b.
History 1, 61.
Italian 1, 4.
Latin 1a, 1, 2.
Mathematics 1, 2, 3, 4, 5, 7, 15.
Meteorology 1.
Music 1, by examination.
Physics 3, 4, 6.
Physiology, 303, 306.
Poultry Husbandry 1.
Rural Education 6, 7.
Rural Engineering 1, 21, 24, 31.
Spanish 1, 3, 4a, 4b, 5a, 5b.
Zoology 1, 8, 11.

GRADUATED CREDIT

The passing grades are designated A, B, C, D, and P. In courses taken in the College of Agriculture, students meriting grade C receive normal credit toward graduation; grade B, 10 per cent additional credit; grade A, 20 per cent additional credit; grade D, credit reduced 10 per cent; and grade P, credit reduced 20 per cent. No student may be graduated in less than eight terms unless his work in the College of Agriculture averages 10 per cent excess credit.

COMBINED COURSE IN AGRICULTURE AND VETERINARY MEDICINE

Inasmuch as the requirements for graduation of the College of Agriculture and of the College of Veterinary Medicine are to some degree the same, it is possible, by a judicious use of elective hours, to complete the requirements in both colleges in seven or in six and a half years.

DEPARTMENTS OF INSTRUCTION

WITH OUTLINES OF COURSES THAT MAY BE CHOSEN BY REGULAR OR SPECIAL STUDENTS AS AGRICULTURAL ELECTIVES

Special Notices

The first term begins with the opening of the college year, in September. The second term begins in February. (See calendar, page 2.)

Unless otherwise noted, all courses are given in the buildings of the College of Agriculture. Courses enclosed in brackets will not be given in 1925–26.

Courses numbered from 1 to 100 are open to undergraduates generally; courses numbered from 101 to 200 are intended primarily for upperclassmen and graduates; courses numbered from 200 to 300 are intended primarily for graduates.

The main divisions of subject matter under which the courses are arranged are, for the most part, separate administrative units. The exceptions are bacteriology, which is administratively joined with dairy industry; zoology, which goes with entomology and limnology; drawing, part of which goes with floriculture and ornamental horticulture and part with rural engineering; and the course in Wild Life Conservation and Game Farming, which is given cooperatively.

AGRICULTURAL CHEMISTRY

Courses in agricultural chemistry are listed in the announcement of the College of Arts and Sciences.

AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

Farm Management

101. **Farm Records and Accounts.** First term. Credit three hours. Open to sophomores, juniors, and seniors who have passed the farm-practice requirement. Should precede course 102. Lectures, T Th 10. Poultry Building 375. Laboratory, M T or W 2–4.30. Farm Management Building 102. In addition to the regular laboratory period, outside work will occasionally be assigned instead of lectures. Assistant Professor Noble.

Farm inventories, cash accounts, income-tax reports, single-enterprise cost accounts, complete farm cost accounts, and other farm records. Special emphasis is given to the interpretation of results and their application in the organization and management of farms. One half-day field trip will be taken, about November 1, on which day the laboratory period will be from one o'clock to seven o'clock. Laboratory fee, $3.

102. **Farm Management.** Second term. Credit four hours. Open to juniors and seniors who have passed the farm-practice requirement and to graduate students. This course is designed for students who have had considerable farm experience. It should be taken near the end of the student's college course, and should be preceded or accompanied by course 101, economics, and as many as possible of the subjects dealing with the production of crops and animals. Lectures, M W F 10. Farm Management Building 102. One laboratory period a week, by assignment. Farm Management Building 102. On days when farms are visited, laboratory work may last longer than two and one-half hours. Professor Warren and Mr. Call.

Lectures, recitations, and laboratory practice. Farming as a business; types of farming; balance of business; size of business; rates of production; farm layout; building arrangement; labor management; machinery; marketing; ways of starting to farm; forms of tenure and leases; choosing and buying a farm; use of capital and credit; planning, organization, and management of specific farms.

One or two out-of-town trips during April and May will necessitate leaving on noon trains and returning on evening trains. Laboratory fee, $3.

103. **Business Organization and Management of Successful New York Farms.** First term. Credit three hours. Open to seniors and to graduate students. Prerequisite, permission to register, and an unusually good record in courses 101 and 102. F 2–5, S 8–1. East Roberts 232. Two or three two-day trips will be taken in October or early November, on the regular class days. On days when out-of-town trips are taken, the class will usually leave before 2 o'clock and will not return until evening. Expenses for trips are estimated to be about $25. Professor SCOVILLE.

202. **Advanced Farm Management.** First term. Credit two hours. For graduate students. Lectures, M W 11–1. Farm Management Building 102. Professors WARREN, MYERS, MISNER, SCOVILLE, and PEARSON.

203. **Advanced Farm Management.** Second term. Credit two hours. Lectures, M W 11–1. Farm Management Building 102.

A continuation of course 202.

111. **Agricultural Statistics.** First term. Credit two hours. Prerequisite, permission to register. Lecture, M 8. East Roberts 232. Laboratory, M 2–4.30. Professor PEARSON.

A study of the principles involved in the collection, tabulation, and interpretation of agricultural statistics. This course is designed for students who expect to do research work. Laboratory fee, $3.

112. **Agricultural Statistics.** Second term. Credit two hours. Prerequisite, course 111. Lecture, M 8. Farm Management Building 102. Laboratory, M 2–4.30. Farm Management Building 102. Professor PEARSON.

Laboratory fee, $3.

115. **Agricultural Prices.** First term. Credit two hours. Open to juniors, seniors, and graduate students who have had work in political science, farm management, and agricultural economics. Lecture, W 8. Laboratory, W 2–4.30. East Roberts 232. Professor PEARSON.

Laboratory fee, $3.

116. **Agricultural Prices, Advanced Course.** Second term. Credit two hours. Open to students who have had course 115. Lecture, W 8. Laboratory, W 2–4.30. Farm Management Building 102. Professor PEARSON.

Laboratory fee, $3.

299. **Seminary.** First and second terms. Open only to graduate students. M 4.45–6. Farm Management Building 102. Professors WARREN, BOYLE, MYERS, MISNER, SCOVILLE, HOLMES, PEARSON, and Assistant Professors NOBLE, HART, SPENCER, RASMUSSEN, and ROSS.

MARKETING

(See also courses 111, 112, 115, 116, 299 under Farm Management.)

121. **Accounting.** First term. Credit three hours. Without credit to students who have taken Economics 21a. Lectures, T Th 9. Farm Management Building 102. Laboratory, T or Th 2–4.30. East Roberts 232. Acting Assistant Professor HOLMES and Mr. POWELL.

The fundamental principles of accounting for marketing and other business organizations. Special attention will be given to the interpretation of results, and their use in the organization and management of the business. Laboratory fee, $2.

122. **Accounting.** Second term. Credit three hours. Without credit to students who have taken Economics 21b. Lectures, M W F 9. Farm Management Building 102. Acting Assistant Professor HOLMES and Mr. POWELL.

A continuation of course 121. Laboratory fee, $2.

125. **Business Management.** Second term. Credit three hours. Prerequisite, Economics 1 and Accounting 121 or their equivalents. Lectures, T Th S 8. Farm Management Building 102. Acting Assistant Professor HOLMES.

A study of some of the principles of business administration, illustrated by representative actual problems taken from various types of business. Problems of production, purchasing, financing, selling, and general administration will be considered.

131. **Cooperative Marketing.** First term. Credit three hours. Open to juniors, seniors, and graduate students. Lectures, T Th 8. Farm Management Building 102. Laboratory, Th or F 2–4.30. Farm Management Building 102. Professor MYERS and Mr. BOOTH.

Principles of cooperative organization. Corporation and cooperative law. Financing the cooperative association. Relations to membership. Business policies. Laboratory fee, $2.

232. **Collective Bargaining.** First term. Credit two hours. Open only to graduate students. Lecture, F 9. East Roberts 222. Laboratory one afternoon a week, by asssignment, 2–4. Professor BOYLE.

Collective bargaining and its use by labor, capital, and agriculture. The policy of collective bargaining. A study in price determination.

141. **Marketing.** First term. Credit four hours. Prerequisite, Economics 1. Open to juniors, seniors, and graduate students. Lectures, M W F 8. Farm Management Building 102. Laboratory, M T or W 2–4. East Roberts 222. Professor BOYLE.

A study of the present organization, functions, and operation of the market structure, with particular reference to agriculture. Cooperative marketing is included. Laboratory fee, $1.

142. **Marketing.** Second term. Credit three hours. Open to juniors, seniors, and graduate students. Lectures, T Th 9. Farm Management Building 102. Laboratory, T or Th 2–4.30. Marketing Building. Assistant Professor RASMUSSEN and Mr. ————.

The marketing of apples, potatoes, cabbages, and other products. One all-day trip will be taken in April, on a regular class day, to shipping points. The expense is estimated not to exceed $8. Laboratory fee, $2.

143. **Marketing.** First term. Credit three hours. Open to juniors, seniors, and graduate students. Lectures, M W 9. Farm Management Building 102. Laboratory, M or W 2–4. Marketing Building. Assistant Professor ROSS.

The marketing of milk and dairy products. Laboratory fee, $2.

144. **Marketing.** First term. Credit one hour. Open to all students. Lecture, F 9. Farm Management Building 102. Lectures on marketing and closely related topics by nonresident lecturers. In charge of Assistant Professor SPENCER.

A discussion period, F 11–1, is open to graduate students and to advanced undergraduate students who obtain permission to register. Two hours credit for those who take this period. Farm Management Building 102.

[145. **Transportation.** First term. Credit two hours. Open to juniors, seniors, and graduate students. Lectures, T Th 11. Farm Management Building 102. Mr. ————.] Not given in 1925–26.

Problems in the use of railroads, waterways, and trucks for marketing.

146. **The Organized Exchanges and Speculation.** First term. Credit two hours. Open to graduate students and seniors with adequate preparation. Recitations, T Th 8. East Roberts 222. Professor BOYLE.

RURAL ECONOMY

[161. **Rural Economy, General Course.** Second term. Credit four hours. Prerequisite, Economics 1. Open to juniors, seniors, and graduate students. Professor BOYLE.] Not given in 1925–26.

262. **Rural Economy, Elementary Course.** First term. Credit three hours. Prerequisite, Economics 1. Open to graduate students, and to seniors by special permission. Lectures, M W F 9, and individual conferences. Fernow Hall 210. Professor LAUMAN and Mr. ————.

A study of the factors underlying the present conditions in rural communities at home and abroad, and of forces at work in shaping the agriculture of the world, chiefly along economic lines.

263. **Rural Economy, Advanced Course.** Second term. Credit four hours. Prerequisite, course 262 or its equivalent. Lectures, M W F 9. Fernow Hall 210. Professor LAUMAN.

A more extended study, primarily theoretical, of the general economic problems of agriculture.

269. **Rural Economy Seminary.** First and second terms. Primarily for graduate students, and for seniors by invitation. T 2.30. Fernow Hall 126. Professor LAUMAN.

The earlier part of the year will be devoted to a history of the development of the agricultural-credit question in the United States; in the latter part of the year the work of advanced students will be presented.

HISTORY OF AGRICULTURE

171. **History of Agriculture.** First term. Credit three hours. Open only to seniors and graduate students. Lectures, M W F 11. Fernow Hall 210. Professor LAUMAN and Mr. ————.

The important phases of the development of agriculture are considered historically. Special stress is laid on the rise of the agricultural classes, on agrarian problems, as well as on the beginnings of rational agriculture.

172. **History of Agriculture in the United States.** Second term. Credit three hours. Open only to seniors in all colleges and to graduate students. Lectures, M W F 11. Fernow Hall 210. Professor LAUMAN and Mr. ————.

This course deals with the land, its settlement, and its settlers in their economic, social, and political aspects; the technical development of agriculture; the beginnings of permanent agriculture; the rise and course of marketing problems and of the agrarian movements.

278. **Research in Rural Economy or History.** First and second terms. Credit two or three hours a term. For seniors who have done superior work in course 171 or 262, and for graduate students. Fernow Hall 126. Professor LAUMAN.

279. **Agricultural History Seminary.** First and second terms. Primarily for graduate students and for seniors by invitation. Th 2.30. Fernow Hall 126. Professor LAUMAN.

The year will be devoted to a study of Liebig and Malthus.

AGRONOMY

1. **The Nature and Properties of Soils.** First or second term. Credit five hours. Prerequisite, Chemistry 101 and Geology 100. Assignment to laboratory and recitation sections must be made at the time of registration. Lectures, M W F 9. Caldwell Hall 100. One laboratory period, Caldwell Hall 49. Two recitations, Caldwell Hall 31. Professor BUCKMAN.

A comprehensive course dealing with the composition, properties, and plant relations of soils, with particular reference to the practical use of lime, fertilizers, and other means of maintaining soil fertility. Laboratory fee, $2.

3. **Practical Soil Management.** First term. Credit three hours. Prerequisite, course 1. Lectures, M W 8. Recitation by appointment. Caldwell Hall 143. Professor WORTHEN.

A course dealing with methods of soil utilization, including the use of lime, commercial fertilizers, stable manure, and green-manure crops, in agricultural practice. It includes a study of the influence of crop rotations and fertilizers on the productivity of soils, as shown by field experiments. Particular stress is placed upon factors essential for the practical utilization of New York soils.

11. **Cereals, Forage, and Miscellaneous Crops.** First or second term. Credit four hours. Prerequisite, Botany 1. Lectures, M W 10. Recitation, F 10. Caldwell Hall 100. Laboratory, M T or W 2–4.30. Assignment to laboratory sections must be made at time of registration. Caldwell Hall 250. Assistant Professor COOPER.

The history, culture, use, and distribution of the principal farm crops. Laboratory study of the principal types and varieties. Laboratory fee, $2.

105. **Mechanical Analysis of Soils.** First term. Credit one hour. Given in alternate years. Prerequisite, course 1 and Chemistry 210 and 225. One laboratory period by appointment. Caldwell Hall 201. Professor BIZZELL.

A theoretical and practical study of the methods used in the mechanical analysis of soils. Intended for students specializing in soils. Laboratory deposit, $2.

107. **Soil Bacteriology.** Second term. Credit three hours. Prerequisite, course 1, Bacteriology 1, and Chemistry 210 and 225. Lecture, W, 8. Caldwell Hall 143. Laboratory, W and F 2–4.30. Caldwell Hall 201. Professor J. K. WILSON.

A course in biological soil processes designed primarily for students specializing in soil technology. The laboratory work will be supplemented by reports and by abstracts of important papers on the subject. Laboratory fee, $5.

201. **Soils, Advanced Course.** First term. Credit three hours. Prerequisite, course 1 and Chemistry 210 and 225. Students must consult Professor BIZZELL before registering for this course. Lectures, T Th S 8. Caldwell Hall 143. Professor BIZZELL.

An advanced course designed particularly for students specializing in soil technology. The lectures deal with the important properties of soils from the theoretical and technical standpoints. Review of the literature and preparation of papers are important parts of the work.

221. **Research.** Throughout the year. For graduate students only. Hours by appointment. Caldwell Hall 350. Professors LYON, BIZZELL, BUCKMAN, and J. K. WILSON, and Assistant Professors B. D. WILSON and COOPER.

222. **Seminary.** Throughout the year, without credit. Required of graduate students taking work in the department. S 11–12.30. Caldwell Hall 143.

ANIMAL HUSBANDRY

Students intending to specialize in animal husbandry are advised to register for courses 1 and 2 before taking the more advanced courses.

1. **Principles and Practice of Feeding Animals.** First term. Credit three hours. Lectures, T Th 10. Animal Husbandry Building A. One practice period, T W or Th 2–4.30, by appointment. Animal Husbandry Building. Professor SAVAGE and Mr. KRAUSS.

The general principles of animal nutrition, including the study of feeding standards, the common grain and commercial feeds, the formulation of rations, and the like.

101. **Principles of Animal Nutrition, Advanced Course.** Second term. Credit three hours. Prerequisite, course 1 and Veterinary Physiology 10. For advanced and graduate students. Registration by appointment only. Lectures, M W F 11. Animal Husbandry Building. Professor SAVAGE.

2. **Principles of Animal Breeding.** Second term. Credit three hours. Lectures, T Th, 9. Practice, F 2–4.30. Animal Husbandry Building A, and Judging Pavilion. Professor WING, Assistant Professor C. L. ALLEN, and Mr. MAXWELL.

A general outline of the principles of heredity as applied to the breeding of animals, with a study of animal forms, origin, and formation of breeds, crossing, and grading; an outline of the methods of registration; the study of records and pedigrees. Demonstrations, essays, and reports will be required as supplementary to the lectures.

102. **Problems in Animal Genetics, Advanced Course.** First term. Credit three hours. Prerequisite, course 2 or Plant Breeding 1. Lectures T Th 11. Recitation period by appointment. Animal Husbandry Building. Professor HARPER and assistants.

Lectures, conferences, and reports, including statistical methods as applied to breeding animals. The work will consist largely of practice in making reports on statistical problems.

5. **The Horse.** Second term. Credit three hours. Lectures, T Th 11. Animal Husbandry Building A. Practice, W 2–5. Judging Pavilion. Professor HARPER and Mr. VIAL.

A general course treating of the horse and the mule. Judging, scoring, care and management, economy in feeding, breeding, stable management, including harnessing, hitching, and the like. Origin, history, and development of the breeds of horses.

6. **Horse Training, Practical Course.** First term. Credit two hours. Prerequisite, course 5 and permission to register. Lecture, F 9. Animal Husbandry Building. Practice, in sections by appointment. Animal Husbandry Building and barns. Professor HARPER.

A practical course in the feeding, training, and stable management of horses.

10. **Dairy Cattle.** First term. Credit four hours. Lectures, M W 9. Practice, M T W Th or F 2–6, by appointment; under certain conditions credit may be withheld till after the beginning of the second term. Animal Husbandry Building A, Judging Pavilion, barns, and stables. Professor WING, Assistant Professor C. L. ALLEN, and Mr. MAXWELL.

Origin, history, and development of the breeds of dairy cattle; production of milk; economy of feeding, care, management, and sanitation of the dairy herd; maintenance of the herd; raising calves. Practice in judging, scoring, milking, feeding, stable management, and keeping records.

11. **Breed Study.** Second term. Credit one hour for each breed. Prerequisite, course 10. M 2–4.30. Animal Husbandry Building. Professor WING and Assistant Professor C. L. ALLEN.

An intimate study of the history and the development of family lines and individual records of the leading dairy breeds. Students may register for one or more breeds simultaneously, as follows:

11a. Ayrshire.
11b. Guernsey.
11c. Holstein-Friesian.
11d. Jersey.

12. **Swine.** Second term. Credit three hours. Lectures, T Th 10. Animal Husbandry Building A. Practice, T or Th 2–4.30. Judging Pavilion. Assistant Professor HINMAN and Mr. VIAL.

Origin, history, and development of the breeds of swine; herd management; practice in judging swine; and reports on assigned topics. This course will consist of lectures, recitations, discussions, tracing of pedigrees, and field trips that will give the student a thorough knowledge of the management, production, and marketing of swine. Estimated cost of trips, $15.

13. **Beef Cattle and Sheep.** First term. Credit five hours. Lectures, M W F 10. Animal Husbandry Building A. Practice, T Th 2–4.30. Judging Pavilion. Assistant Professor HINMAN and Messrs. VIAL and GRAMS.

Origin, history, and development of the breeds of beef cattle and sheep; herd and flock management. Practice in judging. This course will consist of lectures, recitations, discussions, reports, tracing of pedigrees, and field trips that will give the student a thorough knowledge of the management, production, and marketing of beef cattle and sheep, both grade and purebred. Estimated cost of trips, $20.

20. **Meat and Meat Products.** First or second term. Credit three hours. Registration limited to forty. Laboratory assignment must be made at the time of registration. Lecture, M 8. Two laboratory periods a week, M T W F 2–4.30, and W S 8–10.30. Animal Husbandry Building B and Meat Laboratory. One required inspection trip to Buffalo and vicinity. Mr. SCHUTT.

A practical course in the slaughtering of farm animals, the cutting of carcasses, and the preparation and curing of meats.

27. **Advanced Judging, Dairy Cattle.** Second term. Credit one hour. Prerequisite, course 10. Saturdays after Easter recess. Hours by appointment. Successful students may also register for one hour in the succeeding fall term. Professor WING, Assistant Professor C. L. ALLEN, and Mr. MAXWELL.

Excursions to neighboring herds and preparation for stock-judging competitions. Attendance at the State Fair will be required.

130. **Health and Disease of Animals.** First term. Credit three hours. Not open to freshmen or to those who have had no courses in animal husbandry. Lectures, M W F 11. Veterinary College. Professor BIRCH.

The course is designed to give the student a clear conception of the causes and nature of the diseases of animals, with suggestions for their prevention. Special attention is given to the methods of preventing the spread of the infectious and epizootic diseases. Such information as is practicable is given for the treatment of slight injuries and for first aid in emergencies.

131. **Horseshoeing.** Second term. Credit one hour. Limited to thirty seniors. W 2–4, or Th 10–12. Farriery, Veterinary College. Professor ASMUS.

240. **Seminary.** First and second terms. Required of all graduate students taking either a major or a minor subject in the department. Advanced undergraduates will be admitted by permission, and if a satisfactory thesis on an approved subject is presented, may receive not to exceed two hours credit. M 9. Departmental staff.

BACTERIOLOGY

1. **General Bacteriology.** First term. Credit five hours. Prerequisite, Chemistry 101. Lectures, recitations, and laboratory practice, M W F 2–5.30. Dairy Building 119 and 301. Professor SHERMAN and Messrs. PRICKETT and STARK.

An introductory course; a general survey of the field of bacteriology, with the fundamentals essential to further work in the subject. Laboratory fee, $10.

2. **Elementary Bacteriology.** Second term. Credit three hours. Prerequisite, Chemistry 101. Lectures, M W 12. Dairy Building 218. Laboratory, T Th 8–10 or 2–4. Dairy Building 301. Professor SHERMAN and Messrs. PRICKETT and STARK.

A general elementary course adapted to the needs of students in Home Economics. Laboratory fee, $10.

3. **Elementary Bacteriology.** Second term. Credit two hours. Prerequisite, Biology 1 and Chemistry 101 and 880. Not accepted as prerequisite for advanced courses. Lectures, M W 12; recitation, F 12. Dairy Building 119. Professor SHERMAN.

A course designed for students in Institution Management. The subject matter considered is about the same as in course 2, but is given without laboratory practice.

4. **Agricultural Bacteriology, Elementary Course.** Second term. Credit two hours. Prerequisite, Chemistry 101. Not accepted as a prerequisite for advanced courses; not open to students having previous training in bacteriology. Lectures, M W 9. Recitation, F 9. Dairy Building 119. Professor SHERMAN.

The elements of bacteriology, with a survey of the relation of microorganisms to agriculture.

106. **Dairy Bacteriology.** Second term. Credit four hours. Prerequisite, course 1. Lectures, recitations, and laboratory practice, M Th 2–5; S 9–12. Dairy Building 119 and 323. Professor STOCKING.

An advanced course for students in bacteriology or dairy industry. The relation of microorganisms to milk and milk products. The subject is treated from the standpoint of economic dairy bacteriology and also from the point of view of milk hygiene and sanitary control. Laboratory fee, $5.

107. **Soil Bacteriology** (Same as Agronomy 107). Second term. Credit three hours. Prerequisite, course 1, Agronomy 1, and Chemistry 210 and 225. Lecture, W 8. Caldwell Hall 143. Laboratory, W F 2–4.30. Caldwell Hall 201. Professor J. K. WILSON.

An advanced course in biological soil processes designed for students specializing in bacteriology or soil technology. The laboratory work will be supplemented by reports and by abstracts of important papers on the subject. Laboratory fee, $5.

Pathogenic Bacteriology. (See the Announcement of the New York State Veterinary College.)

201. **Research.** First or second term. Credit one or more hours, by arrangement. For advanced students.

Special problems in any phase of bacteriology may be elected. Laboratory fee, $2 for each credit hour.

BOTANY

Students wishing instruction in special groups of plants or in special subjects should consult the department.

1. **General Botany.** First and second terms. Credit three hours a term; not ordinarily given for one term only. Lectures, T Th 9 or 11. East Roberts 222. Laboratory, one period of two and one-half hours. Stone Hall. Assignment to sections must be made at the time of registration. Professor PETRY, Dr. GRANT, and Messrs. ARNOLD, P. R. BURKHOLDER, HOTCHKISS, and THOMAS.

This course is designed to furnish a general knowledge of the fundamental facts and principles of plant life. A careful study is made of form, structure, and reproduction of representatives of the principal groups, with a view to orient the student in the plant kingdom and to acquaint him with the principal evolutionary tendencies exhibited. Considerable attention will be given to life processes, particularly in the higher plants. Laboratory fee, $2.50 a term; deposit, $3, for first term only.

3. **Veterinary Botany.** Second term. Credit five hours. Lecture, M W 9. Laboratory, M F 2–4.30. Recitation, T 11. Stone Hall, Botanical Laboratory. Assistant Professor MUENSCHER and Mr. GOLDIN.

A course designed to acquaint the student with those facts about plants of special value to the veterinarian. Special emphasis will be placed on poisonous plants, fodder plants, weeds, and plants used in medicine. Laboratory fee, $5.

13. **Trees and Shrubs.** First term. Credit three hours. Prerequisite, course 1 or its equivalent. Lecture, T 8. Stone Hall 192. Laboratory or field work, M W or T Th 2–4.30. One all-day field trip is required. Stone Hall, Botanical Laboratory. Assignment to laboratory sections must be made in the Botany office at the time of registration. Mr. MANNING.

A course dealing with the identification of trees and shrubs, both in summer and in winter condition. The laboratory work covering identification will be done largely in the field. The work of the latter part of the term will be a study of the taxonomy of woody plants. This course is adapted to the needs of all students wishing a detailed knowledge of trees and shrubs. Laboratory fee, $3; deposit, $3.

15. **Weeds and Weed Seeds.** First term. Credit three hours. Prerequisite, course 1 or its equivalent. Lecture, Th 8. Laboratory, T Th 2–4.30. Stone Hall 205. Assistant Professor MUENSCHER.

This course is designed to meet the needs of students of agriculture and others who wish to obtain a working knowledge of weeds and weed seeds. It will also aid persons intending to teach agriculture or nature study. Laboratory fee, $2; deposit, $3.

117. **Taxonomy of the Higher Plants.** First and second terms. Credit three hours a term. Prerequisite, course 1 or its equivalent. Lecture, first term, Th 12; second term, F 8. Laboratory, M W 2–5. Stone Hall, Botanical Laboratory. Professor WIEGAND and Dr. GRANT.

A study of the kinds of seed plants and ferns, their classifications into genera, families, and orders, and field work on the local flora. Emphasis will be placed on wild plants, but the more common cultivated plants will receive some attention. The course is planned to follow course 1 and to furnish an introduction to the knowledge of the field botany and classification of the higher plants, in preparation for special work in various departments, and as an aid in teaching. Instruction will be given in the preparation of an herbarium and of keys. Laboratory fee, $2 a term; deposit, second term, $3.

Students completing this course may arrange, under course 145, to pursue advanced work in taxonomy.

219. **Seminary in the Taxonomy of Vascular Plants.** Throughout the year. Hours to be arranged. Professor WIEGAND.

A special seminary in topics of particular interest to the taxonomist. Current literature and current problems will constitute a part of the program.

22. **Microscopic Wood Technology.** First term. Credit one hour. Prerequisite, courses 1 and 13 or equivalent. Laboratory, M 2–4.30. A few lectures

will be given during the laboratory periods. Stone Hall, Botanical Laboratory. Professor EAMES and Mr. ————.

This course is planned for students in wood technology and in general forestry. The object is to familiarize the student with the microscopic anatomy of wood. The course includes the identification of commercially important woods; a study of types of wood structure as related to uses, such as wood pulp; the structure of wood as affecting its impregnation with preservatives and other chemicals; and tests of paper to determine source of material. Laboratory fee, $2.

123. **Plant Anatomy.** First term. Credit four hours. Prerequisite, course 1 or its equivalent. Lecture, S 9. Laboratory, W F 9–11.30; S 10–12.30. Stone Hall, Botanical Laboratory. Professor EAMES and Mr. ————.

This course is designed to give a working acquaintance with the internal morphology of vascular plants, and emphasis is placed on practice in interpretation and determination of material. The course is planned primarily for students in applied fields of botany, such as pathology, pomology, or genetics. Students desiring a general training in this subject should take course 126a. Laboratory fee, $5.

124. **Cytology.** Second term. Credit four hours. Prerequisite, course 1 or Zoology 1, and preferably course 126b. Conferences, T Th 9. Laboratory, T Th 10–12.30. Stone Hall 203. Professor SHARP and Miss MCCLINTOCK.

This course deals with the subject matter, literature, and problems of cytology. The survey of the field is sufficiently inclusive to make the course of value to advanced students in the various branches of biology, while emphasis on certain features gives it a special significance for the geneticist. The conference hour is devoted to a discussion of topics suggested by the laboratory observations and assigned reading, and, during the latter part of the term, to the review of new literature. Laboratory fee, $5.

125. **Methods in Histology and Cytology.** Second term. Credit one to three hours, depending on the amount of work done. Given in alternate years. Prerequisites, course 1 or its equivalent and permission to register. M W 2–5. Stone Hall. Professor SHARP.

A course designed to acquaint the student with methods employed in preparing material for histological and cytological investigation. Laboratory fee, $5.

[126a. **Morphology of Bryophytes and Vascular Plants, Part I.** First term. Credit four hours. Prerequisite, course 1 or its equivalent. Lectures, W F 9. Laboratory, W F 10–12.30. Stone Hall 203. Professor EAMES and Mr. ————.] Not given in 1925–26.

Course 126 is designed for students who desire a single advanced course in the structure and development of plants above the Thallophytes. Part I deals chiefly with anatomical and histological features, the inclusion of fossil forms affording a broader basis for discussions of phylogeny. In part II, emphasis is placed on the morphology and cytology of reproduction in the various groups. Credit is given for either part separately, but for completeness both parts should be taken, with part I first, if possible. Laboratory fee, $5 for each part.

[126b. **Morphology of Bryophytes and Vascular Plants, Part II.** Second term. Credit four hours. Prerequisite, course 1 or its equivalent. Professor SHARP and Mr. ————.] Not given in 1925–26.

See statement under course 126a.

Comparative Morphology of Fungi. Given in the Department of Plant Pathology.

227. **Seminary in Morphology.** Throughout the year. Hours to be arranged. Professors EAMES and SHARP.

31. **Plant Physiology.** First or second term. Credit four hours. Prerequisite, all freshman work or its equivalent, and course 1. Lectures and recitations, T Th 10. Stone Hall 192. Laboratory, T Th 2–4.30 or W F 2–4.30. Stone Hall 21. Assignment to laboratory sections must be made at the time of registration. Professor KNUDSON (first term), Professor O. F. CURTIS (second term), and Assistant Professor HOPKINS and ————.

This course is designed to acquaint the student with the general principles of plant physiology. Topics such as water relations, photosynthesis, translocation,

digestion, respiration, mineral nutrition, growth, and reproduction, are studied in some detail, and particular emphasis is placed, in both laboratory and recitations, on discussions of the principles taught and their applications. Laboratory fee, $4; deposit, $2.

231. **Plant Physiology, Advanced Lecture Course.** First and second terms. Credit three hours a term. Prerequisite, training in botany and chemistry, to be determined in each case by the department. Primarily for graduate students. Lectures, M W F 10. Stone Hall 192. Professor KNUDSON (first term) and Professor O. F. CURTIS (second term).

232. **Plant Physiology, Advanced Laboratory Course.** First and second terms. Credit three hours a term. Must be preceded or accompanied by course 231. Laboratory, M 2–5, S 8–12.30. Stone Hall 21. Professors KNUDSON and O. F. CURTIS and Assistant Professor HOPKINS.

Laboratory fee, $5; breakage deposit, $2.

233. **Seminary in Plant Physiology.** Throughout the year. Required of graduate students taking work in the department. Conference, F 11. Stone Hall 192. Professors KNUDSON and O. F. CURTIS and Assistant Professor HOPKINS.

In the first term, topics for discussion will be chosen from current work in plant physiology; in the second term, special outlines will be followed and reports on research studies presented.

[141. **History of Botany.** Second term, without credit. F 4.30. Stone Hall 203.] Not given in 1925–26.

A course of lectures given by various members of the staff with the purpose of acquainting advanced students of botany with the historical development of their science.

145. **Special Problems in General Botany, Taxonomy, Histology, Cytology, and Algae.** Throughout the year. Credit not less than two hours a term. By appointment. Professors WIEGAND, EAMES, SHARP, and PETRY and Assistant Professor MUENSCHER.

Students engaged in special problems or making special studies may register in this course. They must satisfy the instructor under whom the work is taken that their preparation warrants their choice of problem. The laboratory fee depends on the nature of the work and on the number of credit hours.

251. **General Department Seminary.** Throughout the year. Required of graduate students in these subjects. M 4.30. Organized by Professor SHARP, assisted by other members of the department.

Broad problems pertaining to botany will be discussed, literature will be reviewed, and reports of research will be given.

DAIRY INDUSTRY

Students intending to specialize in Dairy Industry are urged to elect Chemistry 210, 225, and 375, and Bacteriology 1, in order that these courses may be completed by the end of the first term of the junior year.

1. **Testing and Composition of Dairy Products.** First or second term. Credit three hours. Lecture, T Th 11, Dairy Building 218; practice, M 2–5 or S 8–11, Dairy Building 209. Professor TROY and Assistant Professor MCINERNEY.

The topics considered are secretion and composition of milk, the lactometer, the Babcock test for fat, acid tests, moisture tests, salt tests, preservative tests, and adulterations. Laboratory fee, $5.

101. **Analysis and Control of Dairy Products.** Second term. Credit three hours. Prerequisite, course 1 and Chemistry 101; should be preceded by Chemistry 210 and 225. Lecture, T 2, Dairy Building 218; practice, T 3–6 and F 2–5, Dairy Building 209. Professor TROY and Assistant Professor MCINERNEY.

The application of chemical methods to commercial dairy practice. Analysis by standard chemical and factory methods; standardization and composition control; tests for adulterants and preservatives. Laboratory fee, $5.

102. **Market Milk and Milk Inspection.** Second term. Credit four hours. Must be preceded or accompanied by course 1; should be preceded or accompanied

by Bacteriology 1 or its equivalent. Lecture, T Th 12. Dairy Building 218; practice, W 1–6 or S 8–1. Dairy Building 146. Professor Ross and Mr. AYRES.

Attention is given to the production and control of market milk, with special reference to its improvement; milk as food; shipping stations; transportation and sale; pasteurizing; standardizing; clarification; certified milk; milk laws; commercial buttermilk; methods of cooling; harvesting and storage of ice; duties of milk inspectors; apparatus and buildings. The practice includes visits to dairies in the vicinity of Ithaca. A required two-day inspection trip in the neighboring counties may be arranged. Laboratory fee, $5.

103. **Butter.** First term. Credit four hours. Must be preceded or accompanied by course 1. Lectures, recitations, and laboratory practice, Th 8–10 and 1–6. Dairy Building 120, 128, and 133. Professor GUTHRIE.

The principles and practice of butter-making and creamery management. Laboratory fee, $5.

104. **Cheese, Introductory Course.** First term. Credit four hours. Must be preceded or accompanied by course 1. Lectures, M W 8, Dairy Building 119. Practice, Th or F 1–6, Dairy Building 157. Professor FISK and Mr. AYRES.

The quality of milk for cheese-making and the various tests used in determining quality. A study of curd-making, in which the changes in different kinds of curd are noted. In order to give the student an idea of some of the different varieties of cheese, several types will be made, including the unripened bakers', Neufchâtel and cream cheese, the soft ripened, such as Camembert and brick, and the hard cheeses, such as Cheddar and Swiss. Some attention will be paid to the quality of the cheese and to cheese-judging. Laboratory fee, $5.

105. **Cheese, Advanced Course.** Second term. Credit two hours. Must be preceded by course 104. Practice, F 8–1. Dairy Building 157. Professor FISK.

In this course the manufacture of both hard and soft-ripened cheeses will be considered. A required inspection trip to cheese plants may be arranged. Laboratory fee, $5.

106. **Condensed Milk, Powdered Milk, and Ice Cream.** Second term. Credit four hours. Prerequisite, course 101. Lectures, recitations, and laboratory practice, F 1–6 and S 8–1. Dairy Building 120, 139, and 151. Assistant Professor PRICE and Mr. AYRES.

The principles and practice of making condensed and evaporated milks, milk powder, ice cream, casein, and other by-products. Laboratory fee, $5.

107. **Dairy Chemistry.** Second term. Credit two hours. Prerequisite, qualitative and quantitative analysis and organic chemistry. Lectures, M W 8. Dairy Building 119. Professor SHARP.

A consideration of milk and dairy products from the physico-chemical point of view.

Dairy Bacteriology. (See Bacteriology 102.)

201. **Research.** First or second term. Credit one or more hours, by arrangement. For advanced students. Dairy Building. Departmental staff.

Special problems in any line of dairy work may be elected. Laboratory fee, $2 for each credit hour.

202. **Seminary.** Throughout the year. Without credit. Required of graduate students taking work in the department; open to undergraduate students taking advanced work. Every other Monday, 5.30–8. Dairy Building. Professor SHERMAN.

DRAWING

1. **Mechanical Drawing.** First or second term. Credit three hours. Lectures during laboratory periods. Laboratory: section 1, W F 2–4.30, or section 2, Th 2–4.30, and S 10.30–1. Two additional practice periods to be arranged to suit the schedule of the student. Dairy Building, Fourth Floor. Work will begin with the first laboratory period. Students must apply at the department office before that period regarding materials required. Assistant Professor REYNA.

A course dealing with the principles and practices involved in the art of conveying information by graphical methods. The work includes use of instruments; lettering; orthographic projection involving plans, elevations, and sec-

tions; isometric drawing or conventionalized perspective; and the practical applications of these principles to simple problems. This course may well be taken early in the course of any one interested in taking further work in any phase of rural engineering.

2. **Mechanical Drawing.** First term. Credit three hours. Open only to students specializing in the institution management course. Lectures during laboratory periods. Laboratory: section 1, M 2–4.30 and T 8–10.30; or section 2, T 2–4.30 and S 8–10.30. Additional practice periods to be arranged to suit the schedule of the student. Dairy Building, Fourth Floor. Work will begin with the first laboratory period. Students must apply at the department office before that period regarding materials required. Assistant Professor REYNA.

A course essentially the same as 1 but including a study of architects' plans and elevations of hotels and other institutions and the layouts of machinery in such buildings.

5. **Mechanical Perspective Drawing.** First or second term. Credit two hours. Lectures during laboratory periods. Laboratory, T Th 11–12 and two two-hour practice periods by arrangement. Dairy Building, Fourth Floor. Assistant Professor REYNA.

A course in perspective representation by mechanical methods, embracing all the fundamentals necessary for practical application to architectural or shop problems.

11. **Free-Hand Drawing.** First and second terms. Credit from two to four hours a term. Students must consult the professor in charge before registering for the course. Lectures during practice. Practice by appointment, daily 9–1 and 2–5, except M afternoon and S morning. East Roberts 371. Professor BAKER and Assistant Professor GARRETT.

An elementary course for the development of graphic expression applicable to scientific studies. Of special value to those who expect to enter the field of teaching, nature study, or biological research.

Since there are no lectures nor required reading in the drawing courses, one hour of credit in free-hand drawing means three hours of actual practice. The drawing periods must be at least two actual hours in length.

12. **Pen and Ink Drawing.** First and second term. Credit from two to four hours. Prerequisite, four hours of course 11 or its equivalent. Practice, same as course 11. Students must consult the professor in charge before registering for the course. East Roberts 371. Professor BAKER and Assistant Professor GARRETT.

13. **Free-Hand Drawing, Advanced Course.** First and second terms. Credit from two to four hours. Prerequisite, four hours of course 11 or its equivalent. Students must consult the professor in charge before registering for the course. Lectures during practice. Practice, same as course 11. East Roberts 371. Professor BAKER and Assistant Professor GARRETT.

14. **Water Color.** First and second terms. Credit from two to four hours. Prerequisite, four hours of course 11 or its equivalent. Practice, same as course 11. Students must consult the professor in charge before registering for the course. East Roberts 371. Professor BAKER and Assistant Professor GARRETT.

115. **Graphic Expression.** First or second term. Credit one hour. Open to juniors and seniors only. Registration limited to twenty-four. T 12. East Roberts 371. Professor BAKER.

A weekly talk on the graphic arts, principles of photography, book illustration, methods of reproducing drawings, pictorial photography, and some of the elements of art. Outside readings and two to four essays on some phases of the course will be required.

ENTOMOLOGY AND LIMNOLOGY

BIOLOGY

1. **General Biology.** Throughout the year. Credit three hours a term. First term prerequisite to the second. Not open to students who have had college courses in zoology and botany. Lectures, M W 9 or 11. East Roberts 222. One practice period a week. T F 8–10.30, or daily except S, 2–4.30. Roberts

Hall 302. Additional sections will be provided if necessary. Students must report to the biology office, Roberts Hall 322, for assignment to laboratory sections. Assistant Professor CLAASSEN, Mr. CUTLER, and assistants.

An elementary course designed to acquaint the general student with the main ideas of biology through selected practical studies of the phenomena on which biological principles are based.

The work of this course begins with a study of the interdependence of organisms. This is followed by a study of the structure, physiology, and general behavior of a series of plants and animals, ranging from the simple to the more highly developed forms. The study of the simpler plants is closely associated with that of the simpler animals to show common features in the development of plant and animal life. The plants which are next studied include the mosses, liverworts, ferns, and seed plants, and the animals include hydra, earthworm, grasshopper, and frog. This is followed by consideration of organization and phylogeny, heredity and variation, natural selection and adaptation, segregation and mutation, the life cycle, metamorphosis and regeneration, and the responsive life of organisms. Laboratory fee, $2.50 a term.

7. **Biology of the Human Species.** First term. Credit one hour. Lectures, T Th 11. Goldwin Smith A. Not open to freshmen. Should preferably follow Biology 1 or its equivalent. Professor NEEDHAM and Assistant Professor CLAASSEN.

A general and elementary account of the origin and development of man, of the evolution of the responsive life, of the main phenomena of human inheritance, of the effect upon population of the alteration of environment by the processes of civilization, of the evolution of the social organism, and of social control.

ENTOMOLOGY

For advanced work in entomology, a reading knowledge of French and German is essential. Chemistry 101, 210, and 225, or their equivalents, are highly desirable.

1. See Biology, course 1.

11. **The Ecology of Insects.** First term. Credit three hours. Lecture, Th 9. Roberts Hall 392. Practical exercises, Th 2–4.30, and one other by appointment. Professor NEEDHAM and Mr. PAUL NEEDHAM.

A general course in the study of the lives of insects in relation to their environment. Practical studies will be made of the activities of insects and of the rôle that they play in different natural associations. Observations will be made on the relations between their structures and instincts and the situations in which they live, and on many of the ways in which they find a living and establish homes. Laboratory fee, $2.50.

12. **General Entomology.** First term. Credit three hours. Prerequisite, course 1, Zoology 1, or Botany 1. Lectures, W F 9. Roberts Hall 392. Professor HERRICK. Practical exercise, T W Th or F 2–4.30, or S 8–10.30. Roberts Hall 392. Professor HERRICK, Dr. WEHRLE, and Mr. HARWOOD.

This course embraces lectures on the characteristics of orders, suborders, and the more important families, and on the habits of representative species. The practical exercises include a study of the structure of insects and practice in their classification. The lectures only (two hours) may be taken by those who have had courses 21 and 31. Laboratory fee, $2.50.

21. **Elementary Morphology of Insects.** First or second term. Credit three hours. Hours by appointment. Roberts Hall 391. Professor JOHANNSEN and Mr. HERVEY.

This course deals with the external and internal anatomy of several common species of insects. (See note under course 31.) Laboratory fee, $2.

122. **Comparative Anatomy and Histology of Insects.** Second term. Credit two hours. Prerequisite, courses 21, and 12 or 31. Lectures, assigned reading, and reports. T Th 10. Roberts Hall 392. Professor JOHANNSEN.

123. **Insect Embryology and Postembryonic Development.** First term. Credit two hours. Prerequisite, courses 21, and 12 or 31. M W 10. Roberts Hall 392. Professor JOHANNSEN.

124. **Histology of Insects.** First term. Credit three hours. Must be preceded or accompanied by course 122. Laboratory, three periods a week, by appointment. Roberts Hall 391. Professor JOHANNSEN.

Technique in histological methods as applied to insects. Laboratory fee, $4.50.

31. **Elementary Systematic Entomology.** First or second term. Credit two hours. Prerequisite, course 21. Hours by appointment. Roberts Hall 391. Professor BRADLEY and Miss SANDHOUSE.

The wing venation of insects. The determination of the family characters of a selected set of insects. Laboratory fee, $2.

Courses 21 and 31 are introductory laboratory courses in the structure and classification of insects, required of all students who plan to take advanced work in entomology. The work is individual, and both courses may be taken in one term.

131. **Advanced Systematic Entomology.** First term. Credit three or more hours. Prerequisite, course 31. Three laboratory periods of three hours each, by appointment. Roberts Hall 301. Professor BRADLEY.

A training course in the identification and interpretation of obscure characteristics of insects. One hundred and thirty-five or more hours a term in the laboratory must be accomplished by students registered for this course. Laboratory fee, $6.

33. **Elementary Insect Taxonomy.** First and second terms. Credit three hours each term. Prerequisite, course 31. M W F 2–5. Roberts Hall 301. Professors BRADLEY, NEEDHAM, HERRICK, and JOHANNSEN, Assistant Professor CLAASSEN, and Dr. FORBES.

A survey of the more important species of insects, and a study of the characters by which they may be recognized. Laboratory fee, $4.50 a term.

135. **Lepidoptera.** First term. Credit three hours. There is no formal prerequisite, but students must be familiar with elementary entomology and used to handling insects. They should satisfy the instructor on this point before electing the course. Lecture, M 9. Roberts Hall 392. Laboratory, M 10–12, and W by appointment. Roberts Hall. Dr. FORBES.

Identification and classification of Lepidoptera, including their caterpillars; with practice in the technique of preparation involved. Mimicry and other biological problems best illustrated by the Lepidoptera.

138. **Entomological Literature and its Technics.** First term. Credit three hours. Prerequisite, course 12 or 31, or Zoology 8. Lectures and recitations, M W F 11. Roberts Hall 392. Professor BRADLEY.

A study of general entomological literature. Practice in the use of generic and specific indices and of bibliographies, and in the preparation of the latter; methods of preparing technical papers for publication. The rules of nomenclature, including the formation of scientific names.

This course is of a technical nature, and intended to aid students who desire to specialize in entomology or systematic zoology in their contact with literature.

139. **Entomological Reading in Foreign Languages.** German first term, French second term. Two hours a week. Without credit. Open to advanced students in entomology who have an elementary knowledge of the language. Professor JOHANNSEN.

ECONOMIC ENTOMOLOGY

41. **General Economic Entomology.** Second term. Credit three hours. Prerequisite course 12. Lectures, W F 9. Roberts Hall 392. Professor HERRICK. Practical exercise, T W Th or F 2–4.30. Roberts Hall 392. Professor HERRICK and Messrs. WEHRLE and ————.

This course includes lectures on the life histories and habits of injurious insects, together with a consideration of the most approved methods of preventing their

ravages. The practical exercises include a study of the more important insecticides and as many of the commoner pests as time will permit. Several excursions will be made to observe the insects in the field. Laboratory fee, $1.50.

241. **Advanced Economic Entomology and Insectary Methods.** Second term. Credit three hours. Open only to qualified seniors and graduate students. Lecture, Th 11. Roberts Hall 392. Seminary, Th 2–4.30. Field and laboratory work by appointment. Insectary. Professor MATHESON and Dr. WEST.

Economic problems connected with applied entomology will be discussed and reported on, and field observations will be made. Experimental methods in breeding, photographing, investigating, and controlling insects will be discussed and studied. Designed for advanced students in entomology who desire to fit themselves for experiment-station work. Laboratory fee, $2.50.

43. **Forest Insects.** Second term. Credit two hours. Prerequisite, first term of course 12. Lectures, Th S 8. Roberts Hall 301. Professor HERRICK.

A course of lectures dealing with insects injurious to forest and shade trees, together with a consideration of the best methods of controlling their ravages.

PARASITOLOGY AND MEDICAL ENTOMOLOGY

51. **Parasites and Parasitism.** First term. Credit two hours. Prerequisite, General Biology 1 or Zoology 1. Lecture, M or T 9. Roberts Hall 301. Practical exercise, M or T 2–4.30. Professor MATHESON and Dr. WEST.

A consideration of the origin and biological significance of parasitism, and of the structure, life, and economic relations of representative parasites. Laboratory fee, $2.

52. **Medical Entomology.** Second term. Credit two hours. Prerequisite, Zoology 1 or Biology 1. Lecture, T 9. Roberts Hall 392. Practical exercise, T 2–4.30. Roberts Hall 301. Professor MATHESON and Dr. WEST.

This course deals with insects and other Arthropods which are the causative agents of disease in man and animals or are the vectors or intermediate hosts of disease-producing organisms. Laboratory fee, $2.

APICULTURE

61. **General Beekeeping.** Second term. Credit three hours. Prerequisite, course 12. Lecture, T Th 9. Roberts Hall 292. Practical exercises, W 10.30–1 or 2–4.30. Roberts Hall 301. Professor PHILLIPS

This course is intended to afford a general knowledge of the fundamentals of beekeeping. It will be the aim to acquaint the student with the various phases of bee culture, such as life history, instincts, and general behavior of bees, their products, the sources of honey, the rôle of bees in cross-pollination, the equipment of the apiary, wintering problems, the diseases of bees, and the rearing of queens. Laboratory fee, $2.50.

261. **Advanced Beekeeping.** First and second terms. Credit four hours a term. Open only to qualified seniors and graduate students. Two conference periods of two hours each, assigned readings and reports, to be arranged. Roberts Hall 271. Professor PHILLIPS.

A study of general apicultural literature and of the problems of beekeeping. This course is technical and covers investigations, especially those of a scientific character, in all phases of apiculture. Special consideration is given to the study of the beekeeping regions of the country, with particular reference to conditions in New York. Designed for advanced students who expect to specialize in teaching or in research in apiculture.

262. **Apicultural Literature and Its Technics.** First and second terms. Credit three hours a term. Open only to qualified seniors and graduate students. Prerequisite, a reading knowledge of either French or German. Conferences to be arranged, assigned readings and abstracts of current literature. Roberts Hall 271. Professor PHILLIPS.

This course is planned to acquaint the student with the current technical and practical literature of beekeeping, each student being assigned certain journals for the abstracting of all important papers which they contain. Practice in the

use and preparation of bibliography and abstracts and in the preparation of technical papers for publication. Designed only for advanced students in apiculture who expect to specialize in teaching or in research in this field.

Limnology

71. **General Limnology.** Second term. Credit three hours. Open to students who have taken or are taking courses 1 and 12, or the equivalent. Lecture, Th 9. Roberts Hall 392. Laboratory, Th 2–4.30, and one period by appointment. Roberts Hall 492. Professor Needham and Mr. Paul Needham.

An introduction to the study of the life of inland waters. Aquatic organisms in their qualitative, quantitative, seasonal, and ecological relations. The course includes one all-day trip, taken on some Saturday in May. Laboratory fee, $2.50.

73. **Aquiculture.** First term. Credit three hours. Prerequisite, course 1 or Zoology 1. Lectures, M W F 12. Roberts Hall 392. Professor Embody.

An introduction to the scientific principles and practical methods of propagating useful aquatic animals, with special reference to fishes.

74. **Fish Culture.** Second term. Credit two or three hours. Must be preceded by course 73. T 2–4.30, other hours by appointment. Roberts Hall and Experimental Hatching Station. Professor Embody.

A laboratory and field course, designed to give practice in the methods of fish culture. An all-day excursion to one of the state fish hatcheries will be required. The expense should not exceed $9. Laboratory fee, $2.50 a credit hour.

300. **Research.** Throughout the year. Credit three or more hours a term. Prerequisite, permission to register from the professor under whom the work is to be taken. Roberts Hall. Professors Needham, Herrick, Crosby, Johannsen, Bradley, Embody, Matheson, and Phillips, and Assistant Professor Claassen.

Seminary

Seminary. Throughout the year. M 4.45–5.45. Roberts Hall 392.

The work of an entomological seminary is conducted by the Jugatae, an entomological club which meets for discussion of the results of investigations by its members.

EXTENSION TEACHING

101. **Oral and Written Expression.** First term. Credit two hours. Open to juniors and seniors, and to others by arrangement. Public Speaking 1 should precede this course. The number in each section will be limited. Students will consult Mr. Peabody for assignment to sections. Lectures and practice, M W 9, M F 11; W F 10, T Th 11, Roberts Hall 131; T Th 10, Roberts Hall 292. Criticism, by appointment, daily, 8–1. Professors Everett and Wheeler and Messrs. Peabody and ————.

Practice in oral and written presentation of topics in agriculture, with criticism and individual appointments on the technique of public speech. Designed to encourage interest in public affairs, and, through demonstrations and the use of graphic material and other forms, to train for effective self-expression in public. Special training will be given to competitors for the Eastman Prizes for Public Speaking. (See page 16.)

102. **Oral and Written Expression.** Second term. Credit two hours. Prerequisite, course 101, of which course 102 is a continuation. Part of the work of course 102 is a study of parliamentary practice. Lectures and practice, W F 10, or T Th 9, or T Th 10, M F 11. Roberts Hall 131. Criticism, by appointment, daily, 8–1. Professors Everett and Wheeler and Mr. Peabody.

103. **Extension Organization, Administration, and Policy.** First term. Credit two hours. Open to graduate students and seniors, and to juniors by special arrangement. Lectures and written exercises based on field work. W F 9. Roberts Hall 92. Professors Wheeler and D. J. Crosby and Mr. Coryell.

This course deals with extension organization and administration agencies, and policies, as exemplified primarily in the State of New York. It is designed to familiarize students with extension principles as well as practices. It is intended

not only for the prospective county agent or other extension worker in agriculture and home economics, but also for those who are preparing for effective service as citizens in rural communities. Students will submit reports based on personal visits to county farm and home bureau offices and committeemen, offices of leaders of county agents, the college scheduling office, and college specialists, and on attendance at several types of extension meetings. The expense of these visits will vary with the student's own selection of places; it may be kept within $5 or $10.

104. **Advanced Oral Expression.** Second term. Credit two hours. Prerequisite, courses 101, 102, and 103 or Home Economics Extension 100. Hours to be arranged. Mr. PEABODY.

An advanced course of study and practice in oral expression as directly related to the needs of the county agent, the home demonstration agent, the junior club leader, and the extension specialist.

15. **Agricultural Journalism.** First term. Credit three hours. Open only to those who have passed the required hours in English with an average grade of C, or better. T Th S 10. Fernow Hall 122. Professor BRISTOW ADAMS.

This course is intended to give the principles of news writing, largely in connection with agricultural extension work and for prospective county agricultural and home demonstration agents; it is also intended to be of value to those who may wish to undertake the writing of agricultural bulletins.

[117. **Agricultural News Writing.** First term. Credit two hours. No credit for less than two terms. Prerequisite, course 15 or English 8. Professor BRISTOW ADAMS.] Not given in 1925–26.

This course requires the equivalent of laboratory work in practical news writing for publication, on agricultural topics in rural and agricultural journals, and will include criticisms, discussions, and consultations on actual problems in agricultural journalism.

[118. **Agricultural News Writing.** Second term. Credit two hours. Professor BRISTOW ADAMS.] Not given in 1925–26.

A continuation of course 117.

[119. **The Country Newspaper.** First term. Credit two hours. Prerequisite, course 15 and Rural Social Organization 1. Professor BRISTOW ADAMS.] Not given in 1925–26.

A study of the country newspaper, its problems, its make-up, and its place as a factor in rural life in New York.

[120. **Agricultural Information Service.** Second term. Credit two hours. Prerequisite, course 15. Professor BRISTOW ADAMS.] Not given in 1925–26.

Advance information, or publicity, in connection with agricultural work; the uses and abuses of publicity; its forms, principles, and effects, including the use of various forms of information in print, such as drawings, photographs, charts, posters, and other similar material in agricultural extension.

FARM PRACTICE

The farm-practice requirement is forty points, twenty of which must be obtained by actual farm work. (See page 22.)

Students taking courses offered in the various departments of the College which include laboratory periods that familiarize them with the materials and methods of the farm, will be given one point toward the farm-practice requirement for each hour of university credit obtained in such laboratory work.

The Office of Farm Practice will assist students in getting work on farms during vacations and at other times, and will supervise and keep records of the work.

Students should consult the office in regard to work on farms.

The office will also be glad to assist those students who have completed the farm-practice requirement in obtaining places on farms where they can gain wider experience.

1. **Farm Practice.** First and second terms. Without credit toward graduation, but giving credit toward the farm-practice requirement, depending on the amount and quality of the work done. Hour and place, by appointment. Mr. BRITT and assistants.

A course designed to assist those students who enter with little or no farm experience. Students will have an opportunity to hitch, harness, and drive horses, and to familiarize themselves with the use of the common farm tools. Admission to this course will be determined by the result of the farm-practice tests. This course should be taken by all new students who have had limited farm experience.

FLORICULTURE AND ORNAMENTAL HORTICULTURE

Instruction in floriculture is planned for the following classes of students: (1) those who intend to make some branch of commercial flower growing their life work; (2) those who plan to enter a retail business; (3) those who are interested in amateur flower growing for pleasure and home decoration; (4) those who plan to take up some line of work on private estates or in city parks. Courses 121 and 122 should not be elected until courses in botany, soils, plant physiology, plant pathology, plant breeding, and economic entomology have laid a broad foundation on which to build the scientific principles of commercial flower growing.

Instruction in ornamental horticulture is planned to meet the requirements of students for (1) work in the propagation of all types of ornamental plants; (2) nursery practice; (3) plant materials for ornamental planting about the home grounds, village squares, and other public properties; (4) the use of plants in landscape planting.

1. **Woody-Plant Propagation and Nursery Practice.** First term. Credit two hours. Lecture, W 8. Floriculture Building. Practice, Th 2–4.30 or S 8–10.30. Professor R. W. CURTIS and Mr. HUNN.

This course is planned to meet the needs of all students in the department. It considers the methods of propagation of all classes of ornamental woody plants and their special treatment during the first stages of growth. A practical course to acquaint students with the principles governing the transplanting of trees and shrubs, and the methods practiced in all types of nursery management. Laboratory fee, $3.

5. **Amateur Floriculture.** First or second term. Credit three hours. Lectures, M W 11. Floriculture Building. Practice, M 2–4.30. Greenhouses. Miss MINNS.

The culture, in the home, of potted plants suitable for window gardening and for outdoor home gardening. The course includes a study of containers, soils, fertilizers, and insecticides; also, the preparation and planting of flower beds. It is planned primarily for students in home economics, but is open to any one desiring information regarding simple methods of plant culture. Laboratory fee, $2.

6. **Garden Flowers.** Second term. Credit three hours. Lectures, T Th 9. Prerequisite, course 11. Registration limited to fifteen students. Floriculture Building. Practice, W 2–4.30. Greenhouses and gardens. Miss MINNS.

A study of the identification and culture of annuals, herbaceous perennials, and roses. The aim is to give the student an intimate knowledge of those forms of annual and herbaceous plants that may be used in garden planting, either on home grounds or in public parks. An excellent collection of plant material is available for demonstration work in this course. Students are strongly advised to follow this course with the one given in the summer session. All members of the class will be required to participate in an excursion to the Thompson estate at Canandaigua, on May 27. Laboratory fee, $2.

8. **A Brief Introduction to Woody-Plant Materials.** Second and first terms. Credit three hours. Lecture, F 8. Laboratory and field trips, M W 2–5. East Roberts. Professor R. W. CURTIS.

A brief study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. This course is intended for general election, and students registering are advised to begin with the second semester and to continue through the summer session and fall semester.

The laboratories and field trips enable the student to recognize common woody plants. The lectures discuss planting areas, planting practices, and plant materials, the last named from the point of view of plants as elements in composition,

in order that the student may learn to see plants not only as growing things but as possible units in planting design. All members of the class will be required to participate in an excursion to Rochester, May 28 and 29. Laboratory fee, $1.50.

11. **Principles and Methods of Greenhouse Practice.** First term. Credit four hours. Prerequisite to courses 6, 12, 121, 122, and 125. Lecture M T Th 9. Practice, T 2–4.30. Floriculture Building. Professor WHITE.

A course intended to acquaint students with general floricultural methods and the scientific principles governing the propagation and culture of flowers. This is an elementary course in commercial flower growing. Laboratory fee, $2.50.

12. **Greenhouse Construction.** Second term. Credit two hours. Prerequisite, course 11. Lectures and discussions, M 12. Laboratory, Th 2–4.30. Floriculture Building. Professor NEHRLING.

The evolution of the greenhouse; present-day types; materials and methods of construction; principles and methods of heating.

121. **Commercial Floriculture.** First term. Credit four hours. Prerequisite, courses 11 and 12, Botany 1 and 31, Agronomy 1, and the farm-practice requirement. This course is planned for men students who intend primarily to grow flowers and potted plants for sale, and no student will be admitted to the course who has not had at least a half year of practical experience in a greenhouse range. Lectures and recitations, M W F 10. Floriculture Building. Practice, F 2–4.30. Greenhouses. Professor NEHRLING.

Studies in the culture of commercial florists' crops. Methods of packing, shipping, and marketing will be considered. The class will participate in a required excursion to Utica and Rome on October 23. Laboratory fee, $2.

122. **Commercial Floriculture.** Second term. Credit four hours. Prerequisite, course 121. Lectures and recitations, M W F 10. Floriculture Building. Practice, F 2–4.30. Greenhouses. Professor NEHRLING.

A continuation of course 121, with methods of culture of commercial crops not previously considered. These courses, with their prerequisites, aim to fit students for commercial work. Students taking these courses are expected to work on commercial ranges during one semester and vacations. The class will participate in a required excursion to Elmira on March 25. Laboratory fee, $2.

123. **Wholesaling and Retailing Flowers.** First term. Credit three hours. Prerequisite, courses 121 and 122 and permission to register. Lecture, T Th 10. Practice, W 2–4.30. Greenhouses. Professor NEHRLING.

This course is planned with the view of giving students a thorough knowledge of methods of retail-store management, store equipment, salesmanship, business methods, delivery, decorating for all functions, flower arrangement and the making of designs, methods of conducting cooperative flower exchanges, and wholesale markets. Other topics of a like nature will be discussed. There will be a required trip to Rochester, to visit a wholesale establishment and retail stores, on November 18. Laboratory fee, $5.

125. **Conservatory Plants.** Second term. Credit two hours. Prerequisite, course 11 and Botany 1. Lectures and demonstrations, T Th 10. Floriculture Building. Professor NEHRLING.

Designed for students interested in work on private estates or in parks. A study of such tropical and subtropical foliage and flowering plants as are used for the ornamentation of glasshouses of decorative type. Laboratory fee, $1.

31. **Flower Arrangement.** Second term. Credit one hour. Registration limited to fifteen students in each section. Preference for registration in Section I will be given to students specializing in Floriculture and General Agriculture. Section II is for students in the College of Home Economics. Lectures, demonstrations, and practice: Section I, T 2–4.30; Section II, Th 2–4.30. Greenhouses. Professor WHITE.

A study of the principles and methods of arrangement of flowers for home decoration and table decoration, in baskets, vases, and formal designs; also the arrangement of flowers and plants for all types of interior decoration. Laboratory fee, $5.

43. **A Brief Introduction to Landscape Design.** Second term. Credit three hours a term. Lectures, T Th 10. Recitation, S 10. Caldwell Hall 100. Professors DAVIS and R. W. CURTIS.

A discussion of the first principles involved in landscape planning, with special application to small city and suburban homes, farmsteads, and cottage grounds. The course is intended for students who desire an intelligent point of view in landscape work but who do not intend to take the more technical courses in theory.

51. **Lawn-making and Green-keeping.** First or second term. Credit three hours. A special course, not open to general election. F 2–6. Floriculture Building. Professor R. W. CURTIS.

This course deals with the principles, practices, and materials which have to do with the construction and maintenance of lawns and greens. It includes weekly lectures, laboratories, and reports, and discussions by men prominent as turf experts and green-keepers.

161. **The History and Literature of Ornamental Horticulture.** First term. Credit two hours. Lectures, T Th 11. Roberts Hall 234. Designed primarily for seniors, and required of graduate students. Professor BEAL.

A comprehensive study of the evolution of gardening, the introduction of plant material, and the development of floricultural ideals. Beginning with the earliest records, these are traced through the centuries to the present time. The unusually large library collection of herbals and European works of late date offers exceptional facilities for presenting this course.

162. **Investigation in Floriculture and Ornamental Horticulture.** Throughout the year. Credit one or two hours a term. Prerequisite, permission to register. Designed primarily for upperclassmen and graduate students. Consultation by appointment. Professors WHITE, BEAL, R. W. CURTIS, and NEHRLING.

The investigations of problems in materials for ornamental planting and in the commercial culture of cut flowers and potted plants, exotics, garden flowers, and the like.

201. **Seminary.** First and second terms. Credit one hour a term. Required of advanced students who elect course 162, and of all graduate students in the department. F 9. Floriculture Building. Departmental staff.

FORESTRY

The instruction in forestry is designed to meet the needs of several classes of students: (1) students of general agriculture who wish elementary instruction in the care of woodlands and in forest planting and forest nursery work; (2) prospective teachers, business men, lawyers, and others who desire an understanding of the place of forestry in the life of a nation; (3) technical students in other lines who wish one or more technical forestry courses, such as wood technology; (4) professional forestry students, preparing for forestry as a life work (course outlined below). The entrance requirements are the same as for general agriculture.

During the four years the student is registered in the College of Agriculture his work must include: (a) all the courses required of general agricultural students; (b) solid geometry and plane trigonometry, unless accepted for entrance; (c) such other courses as the Department of Forestry believes to be best adapted to meet the needs of the individual student; (d) at least four months experience in forestry work or in a forest industry, one month of which, in the summer following the junior year, must be spent in the forestry camp conducted by the Department of Forestry in a forest in New York State; (e) Civil Engineering summer camp, of five weeks (see page 47). Requirements (d) and (e) are demanded of all professional forestry students, in lieu of the farm-practice requirement. On the following pages is a recommended sequence of studies that will prove desirable for most students specializing in this field, but at the discretion of the department deviations from it may be made for students entering the course with advanced standing, and for other students, when advisable. In all cases the course of study for a professional forestry student must be planned by the Department of Forestry; and it has been ruled that each professional forestry student must choose as his faculty adviser one of the professors or assistant professors in the Department of Forestry. Admission to candidacy for the degree of master in

forestry may be conditioned on compliance with this regulation. Professional students must register with the department in order that their standing as such may be recognized.

Further details regarding the professional course may be obtained through correspondence with the Department of Forestry. Freshmen who are planning to take the professional forestry course must register with the Department of Forestry. They should enter the College at the beginning of the first term of the college year. Those entering in the second term are likely to have difficulty in arranging satisfactory schedules of courses.

Recommended Sequence of Studies for Professional Students in Forestry

Freshman year

First term	*Hours*	*Second term*	*Hours*
Freshman Orientation Course	1	English 1	3
English 1	3	Botany 1	3
Chemistry 101	6	Geology 100	3
Botany 1	3	Drawing 1	3
Mathematics 3*	3	Forestry 3	2
		Forestry 5	2

Summer following freshman year

Period of required field experience, thirteen weeks.

Sophomore year†

First term	*Hours*	*Second term*	*Hours*
Civil Engineering 110 (Elementary Surveying)	3	Physics 4‡	3
Botany 13	3	Botany 31	4
Entomology 12	3	Civil Engineering 211A (Advanced Surveying)	3
Economics 1	5	Entomology 43	2
Physics 3‡	3	Geology 311	3
Elective			

Summer following sophomore year

C. E. summer camp, five weeks. Civil Engineering 213 (Surveying).

Junior year

First term	*Hours*	*Second term*	*Hours*
Botany 22	1	Forestry 141	4
Forestry 121	3	Forestry 151	3
Plant Pathology 1	3	Forestry 123	3
Agronomy 1§	5	Plant Pathology 111	2
Civil Engineering 214a	2	Elective	
Elective			

Summer following junior year

Department of Forestry summer camp, four weeks, August and September. Professional forestry students must attend this camp to satisfy in part the requirement for forestry practice demanded of forestry students, in lieu of farm practice.

*Mathematics 3 (plane trigonometry) and Mathematics 1 (solid geometry) must be taken during the freshman year if these subjects were not offered for entrance.

†Students planning to elect Chemistry 776 (Chemistry of Pulp and Paper Making) should elect the prerequisite thereto, Chemistry 775 (Engineering Chemistry), during the first term of the sophomore year.

‡Required of students who do not present physics for entrance. Other students should elect Agronomy 1 in the second term of the sophomore year.

§Students who have not had Agronomy 1 in the sophomore year should elect it this term.

Senior year

First term	*Hours*	*Second term*	*Hours*
Forestry 142	3	Forestry 143	2
Forestry 144	2	Forestry 153	3
Forestry 122	1	Forestry 125	2
Forestry 124	4	Forestry 131	3
Forestry 111	2	Forestry 112	2
Electives		Electives	

Graduate year

Adequate preparation for the profession of forestry requires at least a year of graduate study in addition to the four-years undergraduate course. The undergraduate work in forestry leads to the degree of bachelor of science; the graduate work leads to the degree of master in forestry. (See the Announcement of the Graduate School.)

General Forestry

1. **The Farm Woodlot.** First or second term. Credit two hours. Lecture, M 9. Practice, M 2–4.30. Fernow Hall 8. Assistant Professor Guise.

A course covering those phases of forestry that are applicable to the farm woodlot. Identification of the principal trees of this region; measurement of logs, trees, and stands; nursery work, forest planting, thinnings, and improvement cuttings; the preservative treatment of farm timbers. Laboratory fee, $1.

Students expecting to take courses 53 and 24 should not elect course 1, since the ground covered in course 1 is repeated in courses 53 and 24.

2. **Forest Resources of New York State.** Second term. Credit two hours. Lectures, M W 10. Fernow Hall 122. Professor Recknagel.

The place of the forests in the economic and social welfare of New York State. Forest regions and important forest trees. The forest industries of the State. State and private forest holdings and their development, with special emphasis on the utilization of products from farm woodlots.

3. **Conservation of Natural Resources.** Second term. Credit two hours. For others than professional forestry students, Economics 1 is prerequisite. Lectures, T Th 10. Fernow Hall 122. Professor Bristow Adams.

The conservation of natural resources in the United States; the interrelation of the uses and wastes of the forests with those of various resources. The influence of the physical equipment of America on human life and on American civilization, with special reference to the natural resources, including the human element, as the basis of national strength and power.

4. **The Field of Forestry.** First term. Credit two hours. Lectures, M W 10. Fernow Hall 122. Professor Hosmer.

The place of forestry in the life of a nation; its nature, aims, and importance; the five main branches of forestry; national, state, communal, and private forestry.

5. **Introduction to Forestry.** Second term. Credit two hours. Required of first-year professional forestry students. Others should take course 4. Lectures, W F, 12. Fernow Hall 122. Professor Spring and other members of the forestry staff.

An introductory course intended to acquaint the student with the forestry profession, and to give him a broad view of it as a basis for subsequent technical instruction.

Forest Policy

111. **The Development of Forestry.** First term. Credit two hours. Open only to professional forestry students. Lectures, T Th 9. Fernow Hall 118. Professor Hosmer.

The historical development of forestry in the leading countries of the world, with particular reference to its present status; the history of forestry in the United States under federal, state, and other auspices.

112. **Forest Policy: Federal and State.** Second term. Credit two hours. Prerequisite, course 111. Open only to professional forestry students. Lectures, M F 9. Fernow Hall 122. Professor HOSMER.

The economic basis of forestry; the public land policy in its relation to forestry in the United States; the forest policies of the Nation and of the several States, with especial reference to the principles that underlie them; forest policy as expressed in law; forest taxation.

SILVICULTURE

24. **Elements of Forestry: Silviculture.** First term. Credit three hours. Lectures, T Th 9. Fernow Hall 122. Practice, T or W 2–4.30. Fernow Hall 118. Professor SPRING.

An elementary course covering the life history of the forest; forest planting, seeding, and nursery work; natural reproduction of the forest; care of the crop during its growth, including thinnings; protection from fire and other enemies; identification of the principal timber trees of this region. (See course 53.) Laboratory fee, $1.

Courses 53 and 24 may be taken independently. If both courses are taken, they should meet the needs of students who wish a more detailed knowledge of woodland management than is given in course 1, but do not wish the professional courses.

121. **Timber Trees and Forest Regions.** First term. Credit three hours. Prerequisite, Botany 13. Lectures, M F 8. Practice, T 2–4.30. Fernow Hall 122. Professor BENTLEY.

A brief account of the forest regions of the world; detailed description of the forest regions of the United States and Canada; the distribution, importance, and silvical characteristics of a large number of the leading timber trees of the United States and Canada, and the identification of such of these as do not grow near Ithaca. (The identification of trees growing near Ithaca is included in Botany 13.) Laboratory fee, $2.

122. **Forests of Foreign Countries.** First term. Credit one hour. Prerequisite, course 121 or its equivalent. Lecture, M 11. Fernow Hall 122. Professor BENTLEY.

Lectures and assigned readings on the forest trees and resources of foreign countries.

123. **Forest Planting.** Second term. Credit three hours. Lectures, until spring recess, M W 8; thereafter, W 8. Fernow Hall 122. Practice, until spring recess, S 8–10.30; thereafter, S 8–1. Fernow Hall 118. Professor SPRING.

Collection, care, and testing of tree seeds; identification of tree seeds and seedlings; raising trees in a forest nursery; starting forests by planting trees and by direct seeding; fixation of sand dunes; forestation on the prairies and under semi-arid conditions. Laboratory fee, $2.

124. **Silviculture A.** First term. Credit four hours. Prerequisite, course 121 and Botany 13 and 31 or their equivalents. Lectures, M W F 9. Fernow Hall 122. Field work, F 2–4.30. Fernow Hall 118. Professor SPRING.

A study of the fundamentals of silviculture; the standard methods of reproducing forests naturally; the methods of tending forests. Laboratory fee, $1.

125. **Silviculture B.** Second term. Credit two hours. Prerequisite, courses 121 and 124. Lectures, T Th 11. Fernow Hall 122. Professor SPRING.

The application of silviculture to the principal species of timber trees in the United States.

FOREST PROTECTION

131. **Forest Protection.** Second term. Credit three hours. Open only to professional forestry students. Lectures, M W F 11. Fernow Hall 118. Professor HOSMER.

The protection of forests from fire and other enemies. Emphasis is placed on the principles underlying forest-fire prevention, detection, and control, especially as these are put in practice through the forest-fire plan. (Protection from injury by insects and fungi is covered in Entomology 43 and Plant Pathology 1 and 111, respectively.)

Forest Utilization

141. **Wood Technology.** Second term. Credit four hours. Prerequisite, Botany 22. Lectures, M W F 11. Fernow Hall 122. Practice, W 2–4.30. Fernow Hall 118. Professor Recknagel and Assistant Professor Guise.

Macroscopic structure of wood; physical, chemical, and mechanical properties of wood; technical uses of wood (paper pulp, destructive distillates, and the like); identification, qualities, and uses of the wood of important trees. Kiln drying and air seasoning of wood; grading of lumber; and wood preservation. Laboratory fee, $2.

142. **Forest Utilization.** First term. Credit three hours. Lectures, M W F 10. Fernow Hall 118. Professor Recknagel.

Logging methods and equipment; logging in representative regions; manufacture of lumber; determination of stumpage values; timber sale contracts; timber sale administration, including marking, brush disposal, and scaling in practice; minor industries; the organization of the lumber industry; markets.

Field studies in forest utilization are made during the required month of camp, immediately preceding the fall term of the senior year.

143. **Forest Industries.** Second term. Credit two hours. Prerequisite, course 142. Lectures, T Th 10. Fernow Hall 118. Professor Recknagel.

The organization and development of the forest industries, particularly the lumber industry and the pulp and paper industry, and their relation to forest management.

144. **Forest Engineering.** First term. Credit two hours. Prerequisite, plane trigonometry and courses in surveying. Lectures, T Th 11. Fernow Hall 122. Professor Bentley.

The construction of trails, roads, telephone lines, and the like, especially as applied in work on the national forests.

Opportunity for practice is afforded during the required month in camp.

Forest Management

53. **Elements of Forestry: Mensuration and Management.** Second term. Credit three hours. Lectures, T Th 9. Fernow Hall 122. Practice, T 2–4.30. Fernow Hall 118. Professor Bentley.

An elementary course including: estimating and measuring the amount of standing timber and its value; measurement of logs and other forest products; rate of growth of timber in diameter, height, and volume; value increment; age at which timber should be harvested; methods of regulating the amount of timber cut so as to insure a permanent income. (See course 24.) Laboratory fee, $2.

151. **Forest Mensuration.** Second term. Credit three hours. Lectures, W F 9. Practice F 2–4.30. Fernow Hall 118. Professor Bentley.

Measurement of logs and standing timber; timber cruising; study of the rate of growth of timber; volume and yield tables. Laboratory fee, $3.

Opportunities for additional training in methods of forest mensuration are given during the month of required work in camp.

153. **Forest Management.** Second term. Credit three hours. Prerequisite, courses 151, 124, and 125. Lectures, T Th 9. Fernow Hall 118. Practice, T 2–4.30. Fernow Hall 8. Assistant Professor Guise.

The organizing of a forest property for management, with special attention to forest working plans; forest finance, including forest valuation and forest statics. Advanced work in forest management is given in course 253. Laboratory fee, $1.

253. **Advanced Forest Management.** First term. Credit three hours. Prerequisite, course 153. Open only to graduate students. Lectures, T Th 10. Practice, S 10–12.30. Fernow Hall 118. Professor Recknagel and Assistant Professor Guise.

The organizing of a forest property for management. An important part of this course is the critical study of working plans.

The forest as an investment, including forest valuation (the ascertainment of values) and forest statics (the comparison of values).

254. **Forest Administration.** First term. Credit two hours. Hours, to be arranged. Professor RECKNAGEL.

The administrative organization and business practice in federal, state, and private forestry.

ADVANCED FORESTRY

261. **Seminary.** Second term. Without credit. Required of graduate students in forestry. Hours to be arranged. Fernow Hall 118. Professors HOSMER, SPRING, RECKNAGEL, and BENTLEY, and Assistant Professors GUISE and SPAETH.

Field and classroom conferences on important phases of forestry.

262. **Advanced Work.** Throughout the year. Credit two or more hours a term. Open to graduate and undergraduate students who have had the necessary training. Hours by appointment. Professors HOSMER, SPRING, RECKNAGEL, and BENTLEY, and Assistant Professors GUISE and SPAETH.

Individual advanced study of designated topics.

METEOROLOGY

1. **Elementary Meteorology.** Second term. Credit three hours. Lectures, T Th 10. East Roberts 222. Laboratory to be assigned at the time of registration, T W or Th 2–4.30. East Roberts 341. Professor MORDOFF and Mr. WEBBER.

This is a course designed to acquaint the student with the principles of the general and secondary circulation of the atmosphere; the elements of weather and climate; practical weather forecasting from weather maps and local observations. The laboratory periods include demonstrations, recitations, practice, and comparative studies of general and local weather. Laboratory fee $2.

2. **General Climatology.** Second term. Credit two hours. Prerequisite, course 1. Lectures and recitations, M W 8. East Roberts 341. One conference period a week, by appointment. Professor MORDOFF.

This course is designed to give a general knowledge of climatology and of the various climates of the United States, with emphasis on those of New York State. During the conference hours there will be general discussions of all subjects which are taken up in the course.

211. **Research.** First and second terms. Credit one or more hours a term. Prerequisite, permission to register. Hours, by appointment. Professor MORDOFF.

A course designed for advanced and graduate students. Original investigations in meteorology and climatology.

212. **Seminary.** Second term. Credit two hours. Prerequisite, course 2 and permission to register. M 4–6. East Roberts 341. Professor MORDOFF.

Preparation and reading of reports on special topics. Abstracts and discussions of papers dealing with the current literature of meteorology and climatology. A specific problem will be required of each student.

PLANT BREEDING

101. **Genetics.** First term. Credit four hours. Prerequisite, Botany 1 and plant physiology, or Zoology 1 and either animal or human physiology. Courses in cytology and in taxonomic botany and zoology will be found helpful in connection with this course. Assignment to sections must be made at the time of registration. Lectures, M W F 8. Fernow Hall 210. One conference period, to be arranged. Laboratory, M W or F 2–4.30. Fernow Hall 212. Assistant Professor FRASER, Dr. DORSEY, and Mr. LEWIS.

A general introductory course designed to acquaint the student with the fundamental principles of heredity and variation. Special attention is given to the Mendelian interpretations of the facts of inheritance. Among the topics to be discussed are: the physical basis of heredity, simple cases of Mendelian inheritance, factor interaction, the determination of sex, factor linkage, the measurement of variation, quantitative inheritance, pure lines, inbreeding and cross-breeding, maternal inheritance, and mutation, with suggestions as to the relation of genetical principles to eugenics. Laboratory studies of variation, and of the

laws of heredity as illustrated by hybrid material in plants and by breeding experiments with the fruit fly, Drosophila. Laboratory fee, $3.

201. **Genetics, Advanced Course.** Second term. Credit three hours. Primarily for graduate students. Prerequisite, course 101 or its equivalent, Botany 124, and permission to register. A reading and laboratory course, with two conference periods of two hours each, and special laboratory work to be done at the convenience of the student. Fernow Hall 212. Assistant Professor FRASER.

An advanced course dealing with the following topics: the methods of genetical testing and analysis, factor interaction, factor linkage, sex inheritance, mutation, and the numerical results of different systems of breeding and selection. Particular attention will be given to the modes of attacking problems in genetics. Laboratory analyses of experimental data, and studies with Drosophila. Laboratory fee, $3.

103. **Principles and Methods of Plant Breeding.** Second term. Credit two hours. Prerequisite, course 101. Lectures, T Th 9. Fernow Hall 210. Professor BUSSELL.

A study of the application of genetic principles to plant breeding, with special reference to the rôle of hybridization and selection in plant improvement; consideration of methods, technique, and results of plant-breeding investigations.

Trips to the departmental greenhouses, gardens, fields, and seedhouse will be made to acquaint the student with the methods and technique of plant-breeding work.

211. **Biometry.** First term. For graduate students only. Time to be arranged. Professor LOVE.

A discussion of statistical methods as applied to problems in biology and genetics. The course is designed primarily to develop methods for the study of variation, correlation, curve fitting, and probable error.

221. **Research.** Throughout the year. Hours by appointment. Fernow Hall. Professors EMERSON, LOVE, MYERS, and BUSSELL, and Assistant Professors FRASER and WIGGANS.

Investigations of problems in plant breeding, heredity, and variation.

222. **Seminary.** First and second terms. For graduate students only. W 11. Fernow Hall. Professors EMERSON, LOVE, MYERS, and BUSSELL, and Assistant Professors FRASER and WIGGANS.

A seminary for the discussion of papers dealing with the current literature of genetics, plant breeding, statistical methods, and crop varieties and classification, and for the presentation of reports on the research problems of graduate students and members of the staff.

PLANT PATHOLOGY

1. **General Plant Pathology.** First or second term. Credit three hours. Prerequisite, Botany 1 or its equivalent. Assignment to laboratory sections must be made at time of registration. Lecture, W 8. Stone Hall 192. Practice, first term, W F 2–4.30, or Th 2–4.30 and S 10.30–1; second term, W F 2–4.30. Bailey Hall, West Basement. Professor WHETZEL, Assistant Professor WELCH, and Mr. SINDEN.

A fundamental course treating of the nature, cause, and control of plant diseases, illustrated by studies of the commoner diseases of cultivated crops. The practice sections are limited to twenty-four students each. Admission, if registration is in excess of twenty-four per section, on the basis of average scholastic standing to date. Laboratory fee, $4.50; breakage deposit, $3.

201. **Advanced Plant Pathology.** First and second terms. Credit three hours. Prerequisite, courses 1 and 2. Students should consult the professor in charge before registering. Lecture, F 8. Practice, T F 10–12.30. Bailey Hall, Basement. Professor MASSEY.

A presentation and analysis of the experimental and empirical knowledge of plant diseases. The phenomena of infection, susceptibility, host reactions, and symptomatology will be critically considered. Laboratory fee, $4.50; breakage deposit, $3.

2. **Principles of Plant-Disease Control.** Second term. Credit three hours. Prerequisite, course 1. Lecture, Th 8. Stone Hall 192. Conferences (one a week) by arrangement during practice periods. Practice, Th 2–4 30, S 8–10.30. Bailey Hall, West Basement. Professor WHETZEL.

A consideration of the principles and methods of controlling plant diseases. This will include studies on: exclusion, by laws, regulations, quarantine, inspection, and disinfection; eradication, by pruning, seed selection, tree surgery, rotation, disinfection, and other means; protection, by spraying, dusting, wound dressing, and the like; immunization, by selection, breeding, and feeding. Number taking the course limited to twenty-four. Admission, if registration is in excess of this number, on the basis of average scholastic standing to date. Breakage deposit, $3.

111. **Forest Pathology.** Second term. Credit two hours. Prerequisite, course 1. Lectures, M 10. Practice, T 2–4.30. Bailey Hall, West Basement. Assistant Professor WELCH.

A course designed for students in forestry, dealing primarily with fundamental principles of forest pathology and tree-disease control. Laboratory fee, $2.50; breakage deposit, $3.

121. **Comparative Morphology of Fungi.** First term. Credit four hours. Prerequisite, Botany 1 or its equivalent, and permission to register. Lectures, M W 9. Bailey Hall, West Basement. Practice, M W 2–4.30. Bailey Hall, East Basement. Professor FITZPATRICK and Mr. FLYNN.

A synoptical course designed to acquaint the student with the general field of mycology. Emphasis will be placed on morphology and phylogeny, rather than on taxonomy. Laboratory fee, $6; breakage deposit, $3.

[221. **Mycology.** First and second terms. Credit four hours. Prerequisite, Botany 1 or its equivalent, and permission to register. Professor FITZPATRICK and Mr. FLYNN.] Not given in 1925–26.

An advanced course designed especially for students who wish to specialize in plant pathology or mycology. An intensive study of the morphology, taxonomy, and phylogeny of the fungi. (Phycomycetes and Ascomycetes.)

222. **Mycology.** First and second terms. Credit four hours. Prerequisite, Botany 1 or its equivalent, and permission to register. Lectures, M W 11. Bailey Hall, West Basement. Practice, T Th 2–4.30. Bailey Hall, East Basement. Professor FITZPATRICK and Mr. FLYNN.

An advanced course, alternating with course 221, dealing with the Basidiomycetes, Fungi Imperfecti, Myxomycetes, and identification of miscellaneous fungi. Laboratory fee, $6; breakage deposit, $3.

[231. **History of Plant Pathology.** First and second terms. Credit one hour. Prerequisite, course 1 and reading knowledge of French and German. Conference hour by appointment. Bailey Hall, Basement. Professor WHETZEL.] Not given in 1925–26.

232. **German Phytopathological Reading.** First and second terms. For graduates and advanced students. Without credit for undergraduate students. Two one-hour periods a week, to be arranged with the professor in charge. Professor WHETZEL.

241. **Research.** Throughout the year. Not less than three laboratory periods of three clock hours a week. Professors and assistant professors on the departmental staff.

Laboratory fee, $1.50 a credit hour; breakage deposit, $3.

242. **Seminary.** First and second terms. Required of graduate students taking work in the department. Biweekly, Tuesday, 7.30–10 p. m.

POMOLOGY

1. **General Pomology.** Second term. Credit three hours. Prerequisite, Botany 1, Chemistry 101, and, for those who have not met the farm-practice requirements, permission to register. Lectures, T Th 8. East Roberts 222. Laboratory, to be assigned at the time of registration, M T Th or F 2–4.30. East Roberts 108. Professor CARRICK and Messrs. MECARTNEY and ————.

A study of the general principles and practices in pomology; propagation and care of orchard trees and small fruits; harvesting, storing, and marketing fruit. Practical work in budding, grafting, pruning, and planting; study of varieties, growth, and fruiting habits. Laboratory fee, $2; deposit, $1, to be refunded provided all tools lent to the student are returned in good condition.

2. **Fruit Varieties: Identification, Judging, Exhibits.** First term. Credit two hours. Prerequisite, course 1. Lecture, M 12. East Roberts 222. Laboratory, to be assigned at time of registration, F 2–4.30, S 8–10.30 or 9–11.30. East Roberts 108. Professor MACDANIELS and Mr. MECARTNEY.

A study of the most important varieties of apples, pears, peaches, plums, and grapes, chiefly from the standpoint of their identification. Some emphasis is also given to tree characters, regional adaptation, season of ripening, storage quality, and other matters of a similar nature. A part of the time is given to the judging of exhibition fruit, and the Farmers' Week fruit exhibit will be set up by the students of this course. Laboratory fee, $2.

111. **Packing Fruit for Market.** First term. Credit one hour. Prerequisite, courses 1 and 2, and permission to register; should be preceded or accompanied by Entomology 12, Plant Pathology 1, and Agricultural Economics and Farm Management 142. S 8–1. East Roberts 222 and the packing house. Professor OSKAMP or Professor PECK.

Particular emphasis is placed on packing apples in barrels, boxes, and other retail packages, but the work covers also such fruits as peaches, plums, pears, and grapes, in so far as these are available. The effect of grades and packages on distribution and marketing is fully discussed, and consideration will be given to some of the problems of operating a central fruit-packing house. Laboratory fee, $2.

112. **Advanced Laboratory Course.** First or second term, or both. Credit one or more hours a term. Intended for students doing their major work in pomology. Prerequisite, permission to register. S 8–1. Professors HEINICKE, CARRICK, and MACDANIELS and Messrs. MECARTNEY and ————.

During the first term opportunity is given to gain greater familiarity with varieties and experience in judging than can be given in course 2; during the second term this course is designed to give more extended practice in the various nursery and orchard operations than can be given in course 1. Special attention will be given to problems of pruning, tree surgery, bracing, and pest control. Laboratory fee, $2 a term.

[113. **Orchard Field Trip.** Credit one hour. Given in alternate years. Prerequisite, courses 1 and 2, and permission to register. To be taken during the week preceding the week of registration for the first term. Students who wish to take this trip must signify their intention by July 20 preceding. The expense of this trip—about $30—must be met by the individual student. Students may register for this course in the first term. Professor HEINICKE, or Professor CARRICK, or Professor MACDANIELS.] Not given in 1925–26.

The course is designed to give the students who specialize in pomology an intimate knowledge of practical orchard conditions.

121. **Economic Fruits of the World.** First term. Credit three hours. Prerequisite, course 1 and permission to register. Lectures, T Th 8. Laboratory, W 2–4.30. East Roberts 108. Professor MACDANIELS and Mr. MECARTNEY.

A study of all species of fruit-bearing plants of economic importance, such as the date, the banana, citrus fruits, nut-bearing trees, and newly introduced fruits, with special reference to their cultural requirements in the United States and its insular possessions. All fruits not considered in other courses are considered here. The course is designed to give a broad view of world pomology and its relationships with the fruit industry of New York State. Emphasis is placed on botanical relationships and fruit structure. Laboratory fee, $2.50.

131. **Advanced Pomology.** First term. Credit four hours. Prerequisite, courses 1 and 2, Botany 31, and permission to register; should be preceded or accompanied by course 121, Plant Pathology 1, Entomology 12, and Agronomy 1. Discussions, M W F 9. East Roberts 108. One conference period, to be arranged. Professor HEINICKE.

A systematic study of the sources of knowledge and opinion as to practices in pomology; methods and difficulties in experimental work in pomology, and results of experiments that have been concluded or are being conducted.

201. **Research.** Throughout the year. Credit one or more hours a term. Prerequisite, course 131, and permission to register. Professors HEINICKE, CARRICK, OSKAMP, MACDANIELS, and PECK.

200. **Seminary.** Throughout the year, without credit. Required of students taking course 201 and of graduate students in pomology. Time to be arranged. East Roberts 122. Members of the departmental staff.

Undergraduates who are interested will be welcome to attend but will not receive credit toward graduation.

POULTRY HUSBANDRY

1. **Farm Poultry.** Second term. Credit three hours. Lectures, W F 9. Poultry Building 375. Practice: M T W Th or F 2–4.30. Poultry Building 300. Professors RICE, HEUSER, and BOTSFORD, Assistant Professors WEAVER and NORRIS, Dr. C. K. POWELL, and Messrs. BRADLEY, HALL, and HUTTAR.

A brief general course dealing with the practical application of the principles of poultry husbandry to general farm conditions. One or two out-of-town trips taking an entire afternoon will be included.

2. **Poultry Feeds and Feeding.** Second term. Credit three hours. Prerequisite, course 1. Lecture or recitation, T Th 9. Practice, Th 2–4.30; also, reporting three times daily, including Sunday, for four weeks, 7.45–8.30, 12.45–1.15, 4.30–5. Poultry Building 325. Professor HEUSER and Assistant Professor NORRIS.

A study of feeds suitable for poultry; the principles of feeding for egg production, fattening, and rearing; the compounding of poultry rations.

Daily practice for four weeks in flock management.

3. **Poultry Incubation and Brooding.** Second term. Credit three hours. Prerequisite, course 1. Lecture, M 11. Practice, M 2–4.30; also reporting three times daily, including Sunday, for eight weeks, 7.45–8.30, 12.45–1.15, 4.30–5. Poultry Building 325. Assistant Professor WEAVER.

Principles and practice of incubation and brooding. Daily practice for four weeks in operating incubators and for four weeks in the management of a brooder and a flock of chickens.

11. **The Breeds of Poultry and Judging.** First term. Credit two hours. Prerequisite, course 1. Lecture or recitation, F, 11. Poultry Building 325. Practice, Th or F 2–4.30. Breed Observation House. Mr. HALL.

The origin, history, and classification of breeds of domestic poultry; judging the principal breeds for fancy and production points by score-card and comparison methods; fitting fowls for exhibition. A required trip will be made to one of the leading poultry shows the second or third week of January. Trips to nearby farms will also be made.

12. **Poultry Breeding.** Second term. Credit two hours. Prerequisite, course 11. Lecture or recitation, F 11. Poultry Building 375. Practice, F 2–4.30. Poultry Building 325. Mr. HALL.

The principles and practice of poultry breeding.

21. **Poultry-House Design and Construction.** Second term. Credit two hours. Prerequisite, course 1, and permission to register. Lecture or recitation, T 11. Practice, T 2–4.30. Poultry Building 325. Professor BOTSFORD and Mr. HUTTAR.

A study of principles of poultry-house construction; planning, arranging, and designing poultry houses; estimating the cost of buildings; studying building plans; practice in erecting and remodeling houses and in making appliances. An excursion to neighboring farms will be made.

31. **Marketing Poultry Products.** First term. Credit three hours. Prerequisite, course 1. Lecture or recitation, M W 11. Poultry Building 325. Practice, M or T 2–4.30. Poultry Building 100. Dr. C. K. POWELL and Mr. HUTTAR.

This course deals with the preparation of poultry and eggs for market, and with storage and preservation. A class trip to New York, following the Christmas holidays, is required of all students. This trip gives the students an opportunity to become familiar with the live- and the dressed-poultry and the egg, markets, and with wholesale dealers. The total necessary expense is about $35.

135. **Poultry Farm Management.** Second term. Credit two hours. Prerequisite, courses 1, 11, 31, and 137, and must be preceded or accompanied by courses 2, 3, 12, and 21. Lecture or recitation, W 11. Poultry Building 325. Practice, W 2–4.30. Poultry Building 325. Professors RICE and BOTSFORD.

The principles of farm management as applied to the poultry farm; selection of the farm; use of poultry-farm score cards; farm layout and arrangement of buildings; study of farm records. As a final problem, each student will work out plans for the management of a poultry enterprise that seems most adaptable to his personal needs. The course will include several required excursions, one of which will be a two-day trip, to representative poultry plants in April and May, at an approximate cost of $15.

137. **The Field of Poultry Husbandry.** First term. Credit two hours. Prerequisite, course 1. Lectures, T Th 11. Poultry Building 375. Professor RICE.

A study of the general field of poultry husbandry, for students specializing in the department. The course includes a study of the bibliography of poultry husbandry and of the history, the scope, and the opportunities of the poultry industry.

141. **Research.** First or second term, or throughout the year. Credit one hour. Prerequisite, permission to register. Time arranged by appointment. Poultry Building. Members of the departmental staff.

An original investigation of a problem in poultry husbandry to be presented as a written thesis. Frequent conferences are required of all students electing this course.

242. **Seminary.** Throughout the year. For graduate students only; required of all graduate students in poultry husbandry. T 4.45. Poultry Building 325. Members of the departmental staff.

A discussion of advanced work in poultry husbandry.

RURAL EDUCATION

1. **Introduction to Problems of Public Education.** Second term. Credit two hours. Open to freshmen and sophomores only. T Th 9. Caldwell Hall 143. Professor WORKS.

The purpose of this course is to introduce students to some of the more important problems of education.

[101. **Introduction to Problems of Public Education.** First term. Open to juniors and seniors only.] Not given in 1925–26.

PSYCHOLOGY

111. **Psychology.** (For students of education.) First or second term. Credit four hours. Open to juniors and seniors. First term: Section 1, lectures, M W F 11, Caldwell Hall 143; laboratory, T 2–4.30, Caldwell Hall 282. Section 2, lectures, T Th S 8, Home Economics Building 100; laboratory, W 2–4.30, Caldwell Hall 282. Section 3, lectures, M W F 9, Caldwell Hall 143; laboratory, Th 2–4.30, Caldwell Hall 282. Second term: section 1, lectures, M W F 11, Caldwell Hall 143; laboratory, T 2–4.30, Caldwell Hall 282. Section 2, lectures, T Th S 8, Caldwell Hall 143; laboratory, Th 2–4.30, Caldwell Hall 282. Professor KRUSE, Acting Assistant Professor WHITE, and Mr. BAYNE.

211. **Psychology.** (For students of education.) First term. Credit four hours. Section 1, for mature students with teaching experience. Lectures, T Th S 11–12.30. Caldwell Hall 282. Mr. BAYNE. [Section 2, for members of the college staff. Lectures, M W F 11–12.30. Caldwell Hall 282. Professor KRUSE. Not given in 1925–26.]

114. **Psychology.** For students in hotel administration. Second term. Credit four hours. Open to juniors and seniors. Lectures, M W F 9. Stone Hall 192. Laboratory, Th 2–4.30. Caldwell Hall 250. Professor KRUSE.

115. **Psychology.** For students of child training. First or second term. Credit four hours. Open to juniors and seniors. First term: Section 1, lectures, M W F 11, Marketing Building; laboratory, M 2–4.30, Caldwell Hall 282. Section 2, lectures, T Th S, 8, Marketing Building; laboratory, F 2–4.30, Caldwell Hall 282. Second term: lectures, T Th S 8, Marketing Building; laboratory, F 2–4.30, Caldwell Hall 282. Acting Assistant Professor WHITE.

116. **Psychology.** For students of child training. Second term. Credit two hours. Open to students who have had course 111. Lectures, T Th 11. Caldwell Hall 143. Professor KRUSE.

218. **Seminary in Educational Psychology.** Second term. Credit two hours. Th 4–6. Caldwell Hall 100. Professor KRUSE.

METHOD

121. **Principles of Teaching in Secondary Schools.** First or second term. Credit three hours. Open to juniors and seniors who have completed course 111. Lectures: first term, M W F 11, Home Economics Building 100; second term, section 1, M W F 11, Caldwell Hall 100; section 2, M W F 8, Roberts Hall 292. Professors FERRISS and MOORE.

The development of certain principles of teaching in secondary schools, and their application to practical questions arising from the problems of selecting and organizing teaching materials, planning class work, making the assignment, determining classroom and laboratory methods, directing study, managing the class, measuring the results of teaching, and so forth, considered in the light of the principles developed.

[222. **Principles of Method.** Second term. Credit three hours. Prerequisite, course 211, or its equivalent. Designed primarily for graduate students. Alternates with course 226. Professor STEWART.] Not given in 1925–26.

Deals with typical teaching situations in the light of current educational theory, to discover the fundamental principles involved. Attention will be directed to the special forms of teaching, such as: the project, the survey, the socialized assignment, the socialized recitation, individual instruction, the direction and supervision of study. Special emphasis is given to the problems of teaching as they relate to vocational education.

223. **Teaching the Elementary School Subjects.** First term. Credit four hours. M W 8, and two additional hours to be arranged. Caldwell Hall 282. Professor MOORE.

A detailed consideration of the research studies in the teaching of the elementary school subjects.

226. **Principles of Supervision.** Second term. Credit three hours. Designed for graduate students. Alternates with course 222. Lectures, T Th S 9. Caldwell Hall 282. Professor MOORE.

The work of the supervisor will be analyzed, and the problems arising will be considered in the light of the principles of teaching.

236. **Problems of Extension Teaching.** Second term. Credit four hours. Open to graduate students who have completed course 211 or its equivalent, and to seniors who have completed course 111 or its equivalent. The student's schedule must permit of group and individual observation of extension work as a required part of the course. Lectures, T Th 11–12.30. Caldwell Hall 282. Professor EATON.

The course will consist in a study and discussion of the problems of college extension work in agriculture and homemaking, its aims, organization, and methods. It will involve comparative studies of aims and organization in several countries and in selected States of the United States; analytical examination of the work of specialists, county agents, club workers, and other extension teachers; and constructive plans for the improvement of extension teaching.

[239. **Problems of College Teaching.** Second term. Credit two hours. Prerequisite, course 211. Professor WORKS.] Not given in 1925–26.

The purpose of this course is to introduce students to the problems involved in agricultural college teaching and to assist in their solution; to consider aims, functions, and present practices in college instruction; and to analyze the work of the college teacher. An effort will be made to relate the lectures, reports, and discussions to the instructional work of the College of Agriculture.

240. **Seminary in Problems of College Teaching.** Second term. Credit two hours. Open to students who have had courses 211 and 239. Th 4.30. Caldwell Hall 143. Professor WORKS.

[131. **Teaching Agriculture in the High School.** First and second terms. Credit three hours a term. Open to students who have completed course 111, who have met the farm-practice requirements, and whose progress in agricultural courses is adequate. Professor STEWART.] Not given in 1925–26.

Problems in teaching agriculture involved in practice teaching. The practicing teacher performs the jobs typical of a high-school department of agriculture. This experience is made the basis of the organization of laboratory exercises, practicums, reports, and discussions, which constitute the principal forms of procedure. The problems described under courses 121, 132, and 133 are organized into a year course on the basis indicated for students preparing to teach agriculture.

132. **The Teaching of Agriculture in the High School.** Second term. Credit three hours. Lectures, M W 8. Laboratory, M 2–4.30. Caldwell Hall 282. Professor STEWART.

A consideration of the problems confronting the teacher of agriculture: the purpose of the instruction; the determination of courses of study and the making of curricula for departments of agriculture; the forms of teaching used, including a consideration of the use of the project and the survey; the selection and utilization of textbooks, supplementary materials, and other facilities for teaching; the relation of the teacher to the community, to the school, and to the Division of Vocational and Extension Education.

133. **Directed Teaching in Agriculture.** First or second term. Credit from two to five hours, amount to be determined by work done. There is opportunity for a limited number of apprentice teachers. Students planning to take this course should arrange with the department during their junior year. Professor STEWART and Mr. HOSKINS.

This course is designed to give students opportunity for observation and teaching under the guidance of the department.

136. **The Teaching of Home Economics in the High School.** Second term. Credit three hours. Should be taken by juniors. Lectures, T Th 8. Home Economics Building 100. Laboratory, T or Th 2–4.30. Caldwell Hall 143. Professor BINZEL.

This course is particularly concerned with modern methods of teaching as related to the field of home economics. Problems treated: types and purposes of homemaking courses; the needs and native interests of the high-school girl, and the project as one means of meeting these needs; the socialized curriculum; the socialized class hour and assignment; supervised study; the plant and equipment; textbooks; the school lunch; the relation of the home economics department to the school and to the community. A one-day excursion is part of the course.

137. **Directed Teaching in Home Economics.** First or second term. Credit two to five hours, amount to be determined by work done. Open to students preparing to teach home economics. Students planning to take this course should arrange with the department during the junior year. General conferences, S 8–10. Caldwell Hall 294. Professor BINZEL and Misses MATTSON and BULL.

This course is designed to give students opportunity for observation and teaching under the guidance of the department. A week-end trip for the purpose of studying equipment is a part of the course.

139. **The Teaching of Science in the Rural Secondary Schools.** Second term. Credit two or three hours. Prerequisite, courses 111 and 121 or their equivalents. Lectures, T Th 10. Fernow Hall 16. Professor PALMER.

This course is designed to help high-school science teachers in the organization of their material, to aid them in introducing scientific ideas to high-school stu-

dents, and to point out, particularly to teachers of biology, useful sources of information and supply. Opportunity is provided for observation of high-school science teaching for the third hour of credit.

241. **The Preparation of Teachers for Rural Schools.** First term. Credit three hours. Lectures, M W F 10. Caldwell Hall 282. Professor BUTTERWORTH.

To meet the needs of those now responsible for the training of rural elementary and secondary school teachers or who are preparing for such duties. A general analysis of the teacher's work will first be made, in order to determine the needs that teacher-training courses should supply. Ways and means of meeting these needs will then be considered in as much detail as time allows.

245. **College Preparation of Teachers of Agriculture.** Second term. Credit three hours. Open to graduate students of approved experience only. Lectures, M W 10, S 11. Caldwell Hall 282. Professor EATON.

This course is based on a study of the work of teachers of agricultural vocations in the secondary schools. In the light of such study will be discussed: the demands on the teacher, in terms of capacities and abilities; current and ideal standards of qualification in teachers; the aims, admission requirements, curricular organization, and methods of college preparation for prospective teachers of agriculture in secondary schools. A visit to a teacher-training institution is included in the course.

247. **Seminary in Agricultural Education.** Second term. Credit two hours. Required of graduate students in agricultural education. T 4.30. Caldwell Hall 143. Professors EATON, STEWART, and WORKS.

248. **The Preparation of Teachers of Home Economics.** First term. Credit three hours. Open to graduate students only. Lectures, T Th S 10. Caldwell Hall 143. Professor BINZEL.

This course is designed to meet the needs of persons who have had both technical preparation in home economics and teaching experience, and who desire to prepare for the special problems involved in the professional work of preparing teachers of home economics subjects on a vocational basis. It treats of collegiate and secondary curricula in home economics with reference to the technical preparation of teachers, their professional needs, supervised teaching experience, and the organization and content of the special-method courses in home economics.

MEASUREMENT

251. **Educational Measurement.** Second term. Credit three hours. Primarily for graduate students. Lectures M W 4.30–5.45. Caldwell Hall 282. Mr. BAYNE.

The place, the means, the method, and typical results of measurement in education in preparation for intelligent reading of current pedagogical and psychological literature, cooperation in giving tests, conducting of educational experimentation, and development of tests; scales and standards for rural schools; elementary statistical terms and methods. Students whose special problems require quantitative treatment of data will be expected to have this course or its equivalent. Rural school survey work conducted by the department will furnish the specific problems and materials of the course.

252. **Conferences on Statistical Methods.** Credit may be arranged. Designed primarily for students taking courses in the department of Rural Education. By appointment. Caldwell Hall 225. Mr. BAYNE.

ADMINISTRATION

261. **Principles of Rural School Administration.** First term. Credit three hours. T Th 11–12.30. Roberts Hall 392. Professor BUTTERWORTH.

The purpose of this course is to develop the principles that govern the organization and administration of education in a State, particularly with reference to the rural situation.

262. **Special Problems in Rural School Administration.** This course is divided into three units in such a manner as to include the major problems of the rural school administrator.

[A. **Developing the Local School Unit.** Second term. Credit two hours. Prerequisite, course 261. Professor BUTTERWORTH. Given in 1926–27.]

[B. **School Finance.** Second term. Credit two hours. Professor BUTTERWORTH.] Not given in 1925–26.

A study of sources of school revenue, relation of revenues to wealth, types of equalization funds, methods of distributing such funds, cost accounting, budget making.

C. Pupil Accounting. First term. Credit two hours. Lectures, T Th 8. Roberts Hall 392. Professor BUTTERWORTH.

The school census, attendance, grading and promotion, retardation, elimination, and similar problems.

[264. **Seminary in Rural School Administration.** Credit two hours. Designed for those desiring an intensive study of certain problems of rural school administration. Professor BUTTERWORTH.] Not given in 1925–26.

267. **Administration and Supervision of Vocational Agriculture.** Second term. Credit three hours. Open to graduate students only. Lectures, M W 11–12.30. Caldwell Hall 282. Professor WORKS.

A course designed for persons fitting themselves for state supervision of agricultural education. It treats of: administration and supervision of agricultural education under the Federal Vocational Education Act; state legislation relating to agricultural education; curriculum and course-of-study problems; supervision and comparative study of types of schools. Visits to schools in New York State and to adjacent States are required as a part of the course.

269. **The Administration and Supervision of Home Economics.** Second term. Credit three hours. Open to graduate students only. Lectures, T Th S 10. Caldwell Hall 282. Professor BINZEL.

This course is intended for supervisors and for teachers who are preparing for supervisory positions in the field of home economics. The course is concerned with the analysis of the supervisor's job and with methods of supervision. Among the problems presented for study and investigation will be the organization and the administration of homemaking departments; principles underlying the present-day changes in home economics education; principles underlying the organization of courses; evaluation of teaching; improvement of teachers in service; teachers' conferences and study classes.

276. **The Curriculum for Rural Schools.** Second term. Credit two hours. For graduate students only. Lectures, T Th 9. Stone Hall 192. Professor FERRISS.

A discussion of the major problems of curriculum content and organization in elementary and secondary schools with particular reference to rural conditions.

SECONDARY EDUCATION

281. **Rural Secondary Education.** First term. Credit four hours. Designed primarily for graduate students. Lectures, M W F 9, and a period to be arranged. Caldwell Hall 282. Professor FERRISS.

A course to consider some of the more basic problems in the nature, organization, curriculum, and extension of secondary education in its adaptation to rural needs. Among the topics treated are: the functions of rural secondary education; present demands upon the rural secondary school; the problems of curriculum building and subject matter; a comparative study of existing types of curricula and courses of study; prevocational and vocational work; pupil guidance; the rural secondary school and the adult.

285. **The Rural and Village Principalship.** Second term. Credit two hours. Given in alternate years. Open to undergraduates by special permission. Lectures, T Th 11. Stone Hall 192. Professor FERRISS.

A course designed primarily for those preparing to be principals of schools containing both the high school and the elementary grades. Attention is given to the needs of those combining the work of principal and teacher of agriculture.

288. **Seminary in Rural Secondary Education.** Second term. Credit two hours. Hours to be arranged. Professor FERRISS.

291. **General Seminary.** First term. Required of all graduate students. Th 4.30. Caldwell Hall 282. Professor BUTTERWORTH.

PHILOSOPHY OF EDUCATION

292. **Introduction to Philosophy of Education.** Second term. Credit three hours. Registration by special permission. Lectures, M W F 9. Caldwell Hall 282. Professor STEWART.

A critical and synthetic treatment of educational problems which grow out of the demands made upon the school as a social institution. An interpretation and criticism, in the light of educational aims and standards, of means and methods which the solution of these problems requires.

[294. **Education and Vocations.** Second term. Credit three hours. Open to graduate students and seniors of approved qualification. Professor EATON.] Not given in 1925–26.

The course will consist in discussions of questions arising under the following general heads; the meaning of vocation; its origin and evolution; conservation and progress in economic society; the function of education in vocation; the organization of education with reference to vocation.

6. **Field Nature Study.** First term. Credit one hour. Field trip Monday afternoon. Fernow Hall 16. Professor PALMER.

This course is designed to meet the needs of rural and other elementary school teachers, high-school teachers of science, camp councilors and directors, leaders in scout organizations, and junior project workers who wish instruction based on field work.

7. **Nature Study.** Second term. Credit three hours. Prerequisite, one-half year of botany, biology, or zoology. Lecture, M 12. Fernow Hall 16. Practical exercises, M W 2–4.30, and T Th 2–4.30. Professor PALMER.

Laboratory and field practice with those subjects in plant and animal life that are most suitable for nature study in the elementary schools. Special attention is given to the methods of study, manner of presentation, and relation of the topics to agriculture. A brief history of the nature-study movement and a study of present-day practices in nature study are given. The New York State Nature Study Syllabus and the correlation of nature study with other subjects are given consideration.

[109. **The Nature-Study Movement and Its Makers.** Second term. Credit two hours. Prerequisite, courses 111, 121, and 7. Professor PALMER.] Not given in 1925–26.

Discussions of the history of the nature movement, with consideration of the contributions made to it and to elementary school methods by administrators, educators, scientists, dramatists, and writers of prose, poetry, and fiction. The graded courses in nature study outlined for various States are considered, to assist in the perfection of similar work in the public schools in New York State.

RURAL ENGINEERING

1. **Farm Mechanics.** First or second term. Credit three hours. Planned primarily for the general student who wishes to get a general idea of the farm applications of mechanical methods and appliances. Reasonable proficiency in drawing is necessary, and Drawing 1 is recommended as preparation for this course. Lectures, T Th 10. Caldwell Hall 143. Practice, first term, M T or F 2–5; second term, M T or W 2–5. Rural Engineering Laboratories. Professor RILEY and Mr. WRIGHT.

A course intended to develop ability to think and to reason in terms of mechanical devices, the machines used for this purpose being types of mowers, binders, single-cylinder gas engines, pumps, spray machinery, and water supply systems. Laboratory fee, $2.

102. **Farm Power Machinery.** Second term. Credit three hours. Prerequisite, course 1 and Drawing 1, or reasonable and approved proficiency in drawing, and permission to register. Lectures, W F 8. Caldwell Hall 100. Practice, Th or F 2–5. Rural Engineering Laboratories. Assistant Professor FAIRBANKS and Mr. WRIGHT.

A study of automobiles, multicylinder gas engines, electric-light plants, tractors, and tractor plows. There will be one one-day field trip during the term. Laboratory fee, $5.

10. **Household Mechanics.** Second term. Credit three hours. For women students. Lectures, T Th 12. Caldwell Hall 143. Practice, F 10–1, F 2–5, or S 10–1. Rural Engineering Laboratories. Professor ROBB.

A course intended to develop ability to think and to reason in terms of mechanical devices. Among the problems selected for this training are exercises in plumbing, soldering, power transmission, and studies in the principles of operation, care, and repair of small mechanical devices, sewing machines, domestic electrical equipment, and automobile engines. Laboratory fee, $1.

21. **Farm Engineering.** First or second term. Credit three hours. It is recommended but not required that students have training in mechanical drawing. Lectures, M W 9. First term: Marketing Building; second term: Caldwell Hall 143. Practice, M or T 2–5. Dairy Building, Fourth Floor, and field. Professors ROBB and MCCURDY.

A study of the practical solution of the elementary problems involved in connection with surveying and mapping the farm; leveling for farm drainage; laying out building foundations and water supply. From data obtained in the field, a contour map will be drawn of one of the fields near the College. Farm sanitation and sewage disposal are studied. Attention is given to concrete construction, including the design of simple concrete structures and estimates of their cost. Laboratory fee, $2.

121. **Farm Engineering, Advanced Course.** First term. Credit three hours. Prerequisite, course 21 or its equivalent. Lecture, T 9. Caldwell Hall 143. Field work, S 8–1. Professor MCCURDY.

A course in topographic surveying and mapping; leveling, including cross-section and earthwork computations; a study of the use and adjustments of the better class of levels and the transit.

122. **Drainage.** Second term. Credit two hours. Prerequisite, course 21 and Agronomy 1, or their equivalent. Lecture, M 10. Fernow Hall 210. Practice, Th 2–5. Dairy Building, Fourth Floor, and field. Professors ROBB and MCCURDY.

A course covering the principles and practice of drainage. One two-day excursion to drainage projects at some distance from Ithaca will be taken some time in May. Laboratory fee, $1.

24. **Farm Concrete.** First term. Credit two hours. Lecture, T 11, Caldwell Hall 143. Practice, Th 2–5. Rural Engineering Laboratories. Professor MCCURDY.

A study of the selection, testing, and proportioning of the materials used in making concrete. Building forms, mixing, placing, finishing, and curing concrete. Waterproofing. Inspection of local sand and gravel banks and of some local concrete structures. Laboratory fee, $1.

31. **Farm Structures.** First or second term. Credit three hours. Laboratory periods, T Th, 10–11, and three two-hour practice periods by appointment. Dairy Building, Fourth Floor. Assistant Professor REYNA.

A study of the principles of design, including lighting, ventilation, sanitation, equipment, floor spacing, and construction, for barns, stables, and other farm buildings, and the application of those principles in the drafting room. Laboratory fee, 50 cents.

131. **Farm Structures, Advanced Course.** First or second term. Credit two or three hours. Prerequisite, course 31. Laboratory periods, T Th 10–11, and two or three two-hour practice periods by appointment. Dairy Building, Fourth Floor. Assistant Professor REYNA.

A study of the practical design of any major farm building other than that designed in course 31. Preparation of specifications and bills of materials. Study of strength of materials.

41. **Farm Shop Work.** First or second term. Credit three hours. Planned for prospective high-school teachers of agriculture. Lecture, S 8. Practice, T 2–4.30 and S 9–1. Rural Engineering Laboratories. Assistant Professor ROEHL.

Practice in woodworking, carpentry, saw filing, tool sharpening, fitting of handles, window repairing, painting, and study of builders' hardware. Study will be made of the farm shop and the selection, care, and use of the tools necessary for farm construction and general repair work. Laboratory fee, $3.

42. **Farm Shop Work.** First or second term. Credit two hours. Planned for prospective teachers of agriculture. Lecture and practice, Th 2–5, and any two hours, Th 9–12. Rural Engineering Laboratories. Assistant Professor ROEHL.

Practice in harness repairing, soldering, cold-metal working including drilling, tapping, threading, hack sawing, filing, and riveting, and hot-metal working including certain forging operations and the shaping and tempering of tools. The course also includes rope work, visits to farms and schools to ascertain farm shop needs, and the making of an inventory of the equipment on some farm. Laboratory fee, $3.

43. **Farm Shop Work.** First or second term. Credit two hours. Similar to course 41 but open to students generally. Drawing 1 is recommended as preparation. Lecture and practice: section 1, W 2–5 and any two hours, W 9–12; section 2, F 2–5, and any two hours, F 9–12. Rural Engineering Laboratories. Assistant Professor ROEHL. Laboratory fee, $3.

44. **Farm Shop Work.** First or second term. Credit two hours. Similar to course 42 but open to students generally. Lecture and practice, M 2–5, and any two hours, M 9–12. Rural Engineering Laboratories. Assistant Professor ROEHL. Laboratory fee, $3.

47. **Farm Blacksmithing.** First or second term. Credit one hour. Practice, M or T 2–4.30. Farriery, Veterinary College. Professor ASMUS.

Welding of iron and ordinary steel such as is used in the parts of modern farm machinery; sharpening, shaping, and tempering of steel tools; miscellaneous forgings, such as chain hooks, links, and so forth; and horseshoeing for those interested and competent. Laboratory fee, $2.

48. **Advanced Farm Blacksmithing.** First or second term. Credit one or two hours. Prerequisite, course 47 and permission to register. Practice, W 2–4.30. Farriery, Veterinary College. Professor ASMUS.

Advanced work in forging and horseshoeing. Laboratory fee, $2 for each credit hour.

251. **Research in Rural Engineering.** First or second term. Credit one or more hours. Prerequisite, adequate ability and training for the work proposed, and permission to register. Professors and Assistant Professors of the department.

Special work in any branch of rural engineering on problems under investigation by the department or of special interest to the student, provided, in the latter case, that adequate facilities can be obtained.

Drawing. The courses in mechanical drawing formerly listed here are now to be found under the heading Drawing.

COURSES FOR STUDENTS IN HOTEL MANAGEMENT

161. **Mechanism of Hotel Machines.** First term. Credit four hours. For juniors. Prerequisite, Drawing 2 and Physics 2. Lectures and recitations, M W F 11. Roberts Hall 292. Laboratory, to be assigned at the time of registration, T Th or F 2–5. East Roberts 1. Assistant Professor RANDOLPH and Mr. ———.

A study of the elements of machines as employed in the mechanical equipment of hotels. Kitchen and laundry machinery, vacuum cleaners, the machine and repair shop, communication systems, plumbing, illumination, and fire protection. A study of graphical representation is included. Laboratory fee, $5.

162. **Hotel Power Plants.** Second term. Credit three hours. For juniors. Prerequisite, course 161. Lectures and recitations, M F 11. Roberts Hall 292. Laboratory, W Th F, 2–5 or S 9–12. East Roberts 2. Assistant Professor RANDOLPH.

Representative types of steam boilers and their auxiliaries; properties of steam, fuels, combustion, firing methods, feedwater purification, and boiler testing. Various types of steam engines, lubrication; pumps and their applications. Testing of apparatus. Laboratory fee, $5.

163. **Hotel Auxiliary Equipment.** First term. Credit three hours. For juniors and seniors. Prerequisite, course 161. Lectures and recitations, W F 8. Roberts Hall 292. Laboratory, M or W 2–5 or T or S 9–12. East Roberts 2. Assistant Professor RANDOLPH.

Electrical machinery, motors, and generators; elevators, electric and hydraulic; heating and ventilation; mechanical refrigeration systems. Laboratory fee, $5.

164. **Hotel Engineering Problems.** Second term. Credit three hours. For seniors. Prerequisite, courses 162 and 163. Lectures and recitations, W M F 9. Roberts Hall 292. Assistant Professor RANDOLPH.

The interrelations of the apparatus. Conditions which determine the type of equipment. Studies of the advisability of different methods for obtaining light, heat, and power. Metering devices as an aid in attaining best operating conditions and in promoting financial economy.

RURAL SOCIAL ORGANIZATION

1. **The Social Problems of Rural Communities.** First term. Credit three hours. Lectures, reports, and discussions, T Th S 11. Roberts Hall 292. Acting Professor BERNARD.

An introductory study of the social problems of rural communities, as a basis for the social organization of rural life. Some of the problems considered are: health, standard of life, education, religion, the family, recreation, government, and community organization. Students will make individual studies of selected communities.

[2. **The Rural Family.** Second term. Credit three hours. Professor SANDERSON.] Not given in 1925–26.

This course is introduced by a brief historical survey of the evolution of family life, particularly during the past century, and a study of the differences between family life in the country and in the city. It considers the problems of family life which are most significant in rural communities, and the position of the rural family and the farm home in their relation to other social institutions and forces of rural life.

3. **Rural Sociology.** Second term. Credit four hours. May be taken either before or after course 1. Lectures and discussions, T Th S 11. Roberts Hall 292. Laboratory, M 2–4.30. Roberts Hall 92. Acting Professor MELVIN.

The aims of the course are two: first, to study the structure and function of rural society, and, second, to give an appreciation of processes and forces which may be directed in wholesome societal development. The social structure, activities, influences, controls, and changes, as exemplified in rural life, constitute the subject matter of this study. Laboratory fee, $1.50.

[104. **Rural Leadership.** Second term. Credit two hours. Professor SANDERSON.] Not given in 1925–26.

A seminary course for the study of the psychology of rural leadership and the means for discovering and developing local leadership.

205. **The Rural Community.** First term. Credit three hours. A seminary course primarily for graduate students. Prerequisite, course 1 and Economics 55a and 55b, or their equivalent. W F 2–4. Roberts Hall 92. Acting Professor BERNARD.

A detailed study of the nature of the rural community; its historical development; a comparative study of types of rural communities; their social psychology and the methods of community development and organization.

108. **The Social Psychology of Rural Life.** First term. Credit three hours. For advanced students. Prerequisite, course 1, one or more courses in psychology, Economics 55a or its equivalent, and permission to register. T Th 2–4. Roberts Hall 92. Acting Professor BERNARD.

Consideration is given to the development of group psychology. On the basis of this, specific application is made to rural life. The dominating rural mores, folkways, and attitudes which arise from the vocation of agriculture and of different types of agriculture, the reactions of family and community life, and the activities of rural organizations, constitute the content of the course. The elements that make for social solidarity, coordination, change, and progress, under the rural environment, are considered.

109. **The Village.** Second term. Credit two hours. Prerequisite, permission to register. Lecture, W 2. Laboratory and reports, F 2–4. Roberts Hall 92. Acting Professor MELVIN.

This course considers the structure and function of the village, including its historical development in the United States. The relation of the village to the city, to the town, and to the farm are analyzed. Emphasis is also placed on the social organization of the village as it relates to the community and to community organization. Students are given an opportunity to work on individual problems with respect to the village.

VEGETABLE GARDENING

1. **Principles of Vegetable Gardening.** Second term. Credit three hours. Prerequisite, Botany 1; Agronomy 1 should precede or accompany this course. Assignment to laboratory section must be made at time of registration. Lectures, M W 11. Poultry Building 375. Laboratory, W or F 2–4.30. Vegetable greenhouses and East Ithaca gardens. Professor WORK.

A general study of the principles of vegetable gardening, giving a comprehensive survey of the industry. This course is intended for the general agricultural student who desires a brief course concerning the subject, and as an introductory course for the student who wishes to specialize in commercial vegetable gardening. Lectures and laboratories consider the history, the economic importance, the cultural requirements, and the marketing, storage, and uses, of the important vegetables. Laboratory fee, $2.

2. **Special Crops.** Second term. Credit three hours. To be preceded or accompanied by Agronomy 1 and Botany 1. Lectures, T Th 11. Laboratory, Th or F 2–4.30. Poultry Building 174. Assistant Professor HARDENBURG.

A special study of those crops which are grown in New York State principally as cash crops for the wholesale market, including potatoes, field beans, field cabbage, and the important canning crops, peas, tomatoes, sweet corn, and snap beans. About one-third of the term's work is devoted to potatoes. Laboratory work consists chiefly of a study of types, varieties, grades and grading, diseases and insects, market relationships, and so forth, of these crops. A short trip to visit nearby bean elevators will be required, for which the expense need not exceed $2. Laboratory fee, $2.

11. **Vegetable Forcing.** First term. Credit three hours. Prerequisite, course 1. Lectures, M W 9. Poultry Building 174. Practice, S 8–10.30. If necessary, a second section will be arranged, M 2–4.30. Poultry Building 174 and vegetable greenhouses. Professor THOMPSON and Mr. ———.

Growing vegetables under glass; greenhouses for vegetables; management problems; the greenhouse crops, their requirements and culture. Laboratory work will consist chiefly of practical exercises in crop production. The class will participate in a required one- or two-day excursion to Rochester, in January, to visit greenhouses; cost, about $9. Laboratory fee, $2.

101. **Vegetable Gardening, Advanced Course.** Second term. Credit two hours. Prerequisite, course 1 and Botany 31. Lectures, T Th 9. Poultry Building 174. Professor THOMPSON.

This course is intended for students specializing in vegetable gardening. Lectures are given on the principles of production and handling of vegetables, based

largely on experimental evidence. The problems of the market gardener, the truck grower, the muck-land farmer, and the producer of canning crops, are considered.

[112. **Systematic Vegetable Crops.** First term. Credit three hours. Prerequisite, course 1. Professor WORK.] Not given in 1925–26.

This course deals with the taxonomy, origin, history, characteristics, and adaptation of kinds, varieties, and strains of vegetables. Attention is also devoted to identification, to classification, and to exhibition and judging. The leading varieties of the vegetable crops are grown each year.

221. **Research.** Throughout the year. Credit three or more hours a term. For graduate students only. Hours by appointment. Poultry Building. Students will usually be required to remain during at least one summer in order to work out experimental problems. Professors WORK and THOMPSON and Assistant Professors SCHNECK and HARDENBURG.

222. **Seminary.** First and second terms. Required of graduate students taking either a major or a minor in this department. Time to be arranged. Poultry Building 174. Members of department staff.

WILD-LIFE CONSERVATION AND GAME FARMING

1. **The Conservation of Wild Life.** First term. Credit two hours. Lectures, T Th 11. McGraw Hall 5. Professors NEEDHAM, HOSMER, WIEGAND, BRISTOW ADAMS, EMBODY, A. H. WRIGHT, and A. A. ALLEN, and cooperating specialists.

This is an introductory lecture course given cooperatively by specialists within and without the College. It is intended to show the relations of the various conservation interests to one another, and to give the student who plans to fit himself for work in game farming, ornithology, fish culture, or other lines of conservation, a general view of the field and a basis for the selection of subsequent elective courses.

ZOOLOGY

1. **General Zoology.** First and second terms. Credit three hours a term. Two lectures and one laboratory period weekly. Lectures, section 1, T Th 9; section 2, T Th 11. Goldwin Smith B. Laboratory, M T W or F 2–4.30, or S 8–10.30. McGraw Hall 2. Registration with the department before instruction begins is necessary for the assignment of laboratory and lecture sections. Professor REED, Assistant Professor YOUNG, Dr. FISHER, and Misses MEKEEL and MCMULLEN.

A comprehensive view of the subject, including the fundamentals of animal biology, the principles of structure, function, origin, and perfection of animal life, and a consideration of the generalizations in zoological theory which seem to be the best founded. Animal types and their classification are employed only as a service-base from which study may proceed. Laboratory fee, $3.50 a term.

8. **Systematic Vertebrate Zoology and Ecology.** First and second terms. Credit three hours a term. Lecture, M 8. Laboratory, section 1, M W 2–4.30; section 2, T Th 2–4.30. McGraw Hall 7. Professor A. H. WRIGHT and Mr. ———.

Lectures on fishes, amphibians, reptiles, birds, and mammals, dealing with the principles of classification and nomenclature; the characters and relationships of these groups; the habits, life histories, and principles of coloration. Laboratory study of the parts employed in classification, and a practical identification of species of North American vertebrates. Field work on the various groups is given during the fall and spring. Laboratory fee, $4.

11. **Field Ornithology.** Second term. Credit three hours. Lecture, M W 11. McGraw Hall 5. Field work and laboratory, T Th 2–4.30, or M W 2–4.30. Professor A. A. ALLEN and Mr. PIRNIE.

This course is intended primarily for students wishing to gain a knowledge of local birds, their habits, songs, nests, and eggs, their relation to agriculture, and

the general principles of their conservation. Field work will be supplemented by laboratory studies. After the first of May, field trips will be taken at 5.30 a. m. Laboratory fee, $2.

[111. **Advanced Ornithology.** First term. Credit three hours. Prerequisite, course 8 or 11. Professor A. A. ALLEN and Mr. PIRNIE.] Not given in 1925–26.

A consideration of the birds of the world. The lectures will take up the structure and classification of birds; geographical distribution; the literature and institutions of ornithology. Laboratory periods will be devoted to the identification of skins of native and foreign representatives of the different families of birds. The first part of the term will be devoted to field work on the fall migration, and the identification of birds in winter plumage. Laboratory fee, $2.

121. **Ichthyology, Advanced Systematic and Field Zoology.** Second term. Credit three hours. Lectures, T Th 9. McGraw Hall 7. Laboratory, F 2–4.30, or S 8–10.30. Professor A. H. WRIGHT.

An amplification of the prerequisite course 8. In the lectures, special emphasis will be laid on the principal phases of animal life; the taxonomy, origin, and evolution of fossil and living groups; geographical distribution; and the literature and institutions of zoology. Laboratory periods will be devoted to the identification of exotic and indigenous forms.

123. **Herpetology.** First term. Credit three hours. See announcement for course 121. Professor A. H. WRIGHT.

[129. **Mammalogy.** First term. Credit three hours. See announcement for course 121. Professor A. H. WRIGHT.] Not given in 1925–26.

131. **Economic Ornithology and Mammalogy.** First term. Credit three hours. Should be preceded by course 8 or 11; presupposes an elementary knowledge of botany and entomology. Professor A. A. ALLEN and Mr. PIRNIE.

This course is designed to assist those planning professional work with birds or mammals. The lectures will take up various phases of the life of birds and mammals in relation to agriculture, with the methods of increasing beneficial species and of destroying vermin, together with the elements of game breeding and fur farming. The laboratory will give practice in the identification of game birds, vermin, the food of birds, the preparation of materials, and the making of skins. The field work will give opportunity for observation of feeding habits, field collecting, methods of attracting birds, and natural-history photography. Laboratory fee, $2.

200. **Special Problems and Research.** Throughout the year. Credit one or more hours. For seniors and graduates only. Opportunity is given for the pursuit of special phases of ornithological study further than is permitted by the more elementary courses, and for investigation.

Permission necessary for registration.

152. **Seminary in Systematic Vertebrate Zoology.** First and second terms. Credit one hour a term. Life zone plans of North America, 1817–1920. Zoogeography of the Old World. Animal coloration. Other topics to be announced. Hours to be arranged. Professor A. H. WRIGHT.

EXTENSION WORK

The extension work of the College of Agriculture is designed to help persons directly on their farms, and to aid those who desire definite instruction but who cannot take a long or a regular course in agriculture at the University. The work supplements the teaching and experimenting of the College. It is professedly a popular work. It endeavors to reach the common problems of the people, to quicken the agricultural occupations, and to inspire a greater interest in country life. It is also a bureau of publicity, whereby there is an exchange of all important matters connected with the progress of the agriculture of the State.

The Office of Farm Bureaus is located on the second floor of Roberts Hall. This office represents the New York State Department of Agriculture, the College of Agriculture, and, through the Dean, the States Relations Service in the United States Department of Agriculture, in the administration and supervision of farm-bureau work in New York State. It has general charge of the organization and supervision of farm bureaus and of the cooperative relations of the

institutions represented by the bureaus, and receives weekly work reports and monthly financial reports from the different counties. Its equipment consists mainly in files and records of the fifty-five farm bureaus in the State.

WINTER COURSES

The Winter Courses are six in number, all opening on November 4, 1925, and closing on February 12, 1926. They are:

1. Agriculture.
2. Dairy Industry.
3. Poultry Husbandry.
4. Fruit Growing.
5. Flower Growing.
6. Vegetable Gardening.

A special program describing these courses will be sent on application to Robert P. Sibley, Secretary, New York State College of Agriculture, Ithaca, New York.

SUMMER SCHOOL

The Summer School is a six-weeks summer session beginning early in July. It is designed not so much to meet the needs of college students as of teachers, supervisors, superintendents, extension workers, and others professionally concerned with activities of an educational nature.

College students desiring to use the summer for additional study are in general advised to enter the Summer Session in Cornell University rather than the Summer School of Agriculture.

Summer School of Biology

Coincident with the Summer School, there is held a School of Biology for teachers and advanced workers. The work is laid out in comprehensive courses including, unabridged, what is offered in the corresponding courses in a term of the regular academic year. For advanced students there is opportunity for special work under the various members of the staff.

COURSES IN OTHER COLLEGES THAT MAY BE OFFERED TO MEET THE SPECIFIC REQUIREMENTS OF REGULAR STUDENTS IN THE COLLEGE OF AGRICULTURE

1. **English.** First and second terms. Credit three hours a term. Students who have not taken the course in the first term may enter in the second term in sections provided for them. Open only to underclassmen who have satisfied the entrance requirement in English. Sections at the following hours: M W F or T Th S 8 9 10 11 12. Rooms to be announced. Messrs. Baldwin, Carroll, Greene, Johnson, P. F. Jones, Lindsay, and Wilder.

A study of composition in connection with the reading of representative works in English literature.

Students who elect English 1 must apply at Roberts Hall 292 on Wednesday, Thursday, Friday, or Saturday of registration week for assignment to sections. Registration in the course is in charge of Mr. Baldwin.

101. **Introductory Inorganic Chemistry.** First or second term. Credit six hours. Lectures: first term, two sections, T Th S 11, or M W F 11. Professors Dennis and Browne. Second term, two sections, T Th S 11 or M W F 11. Professor Browne and Dr. McKinney. Main Lecture Room, Baker. Recitations, one hour a week, to be arranged. Laboratory, two periods a week; M F 2–4.30, T Th 2–4.30, W 2–4.30, and S 8–10.30. Baker 150. Professors Dennis and Browne, Dr. McKinney, and assistants.

100. **Elementary Geology.** First or second term. Credit three hours. Lectures, first term, T Th 11; second term, T Th 9. Sibley Dome. Laboratory period, M T W Th or F afternoon, or S morning. Students must register for laboratory assignments at the elementary geology laboratory, McGraw Hall, before the beginning of the course. Professor Ries, Messrs. Bell, Trainer, and Gwynn, and Miss St. John.

This course is planned to give beginners the fundamental principles of this branch of science. Those desiring additional work in geology are advised especially to take one or more of courses 101, 102, 200, 201, 311, 400, and 500.

200. **Elementary Physical Geography.** First and second terms. Credit three hours a term; if taken after course 201, credit two hours a term. Lectures, M W 9. McGraw, Geological Lecture Room. Laboratory, W or Th 2–4.30. Students must register for laboratory assignments at the physical geography laboratory before the beginning of the course. Professor VON ENGELN and Mr. FRIDLEY.

High-school courses are not the equivalent of this course and will not be so considered as a prerequisite for advanced courses. All students are required to go on one all-day excursion to Enfield Gorge and Falls and to Connecticut Hill.

3. **Introductory Experimental Physics.** First term. Credit three hours. Demonstration lectures and laboratory work covering properties of matter, sound, and light. Lectures, W F 9, or W F 11. Rockefeller A. Professor MERRITT. One two-hour laboratory period a week as arranged. Rockefeller 220. Messrs. FISHER, FORD, LARSEN, and KINKAID.

Courses 3 and 4 form a continuous first course. Course 3 may be taken either before or after course 4.

4. **Introductory Experimental Physics.** Second term. Credit three hours. Demonstration lectures and laboratory work covering heat, magnetism, and electricity. Hours as in Physics 3. Lectures, Assistant Professor HOWE.

10. **Veterinary Physiology.** First or second term. Credit three hours. Lectures, M W F 10. Veterinary College. Professor FISH.

A course designed for students in agriculture and in veterinary medicine, relating to the physiology of nutrition and secretion in domesticated animals. A brief introduction to the general principles of animal physiology, with specific and extended discussions of salivary, gastric, pancreatic, and intestinal digestion; the liver, with its specific secretions and functions; the glands of internal secretion and their relation to the vital processes of the body; the circulatory and respiratory processes; physiology of milk secretion. The lectures are illustrated with experiments, lantern slides, and diagrams.

303. **Elementary Human Physiology.** First or second term. Credit three hours. First term, M W F 10. Second term, section A, M W F 10, section B, M W F 12. Stimson Hall. Professor SIMPSON, Mr. DYE, and assistants.

An introductory course for students of the biological sciences; also for students who expect to teach physiology in secondary schools. The lectures are fully illustrated by experiments, lantern slides, and diagrams.

1. **Modern Economic Society.** First or second term. Credit five hours. Daily except S, 8 9 10 11 12 2. Assistant Professor COPELAND.

Students should register, if possible, on the first day of registration. Section assignments will be made at Goldwin Smith 260 on registration days. In the first term the registration will be limited in number.

A survey of the existing economic order, its more salient and basic characteristics, and its operation.

1. **Solid Geometry.** First or second term. Credit three hours. First term, T Th S 10; second term, M W F 10.

3. **Plane Trigonometry.** First or second term. Credit three hours. First term, M W F 10; second term, T Th S 10.

UNIVERSITY REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE, AND RELATED ELECTIVE COURSES

HYGIENE AND PREVENTIVE MEDICINE

All undergraduates must submit to a physical examination each year in the University Medical Adviser's office. Appointment for this examination must be made during the regular registration days by all new students and sophomores in the first term and by all juniors and seniors in the second term.

All students in the first two years of the undergraduate courses are required to attend lectures on hygiene and preventive medicine given once a week throughout the college year. The first year (Hygiene 1 and 2) is devoted to personal hygiene, mental hygiene, and first aid. The second year (Hygiene 3 and 4) is devoted to sanitation, disease prevention, and group hygiene.

Military Science and Tactics, and Physical Training

1. **Practical and Theoretical Training.** Throughout the year. Every able-bodied male student a candidate for a baccalaureate degree, who is required to take five, six, seven, eight, or more terms in residence, must take, in addition to the scholastic requirements for the degree, one, two, three, or four, terms, respectively, in the Department of Military Science and Tactics. Three hours a week, M T W or Th 2.15–5.15 p. m. New York State Drill Hall.

The requirements in Military Science and Tactics must be completed in the first terms of residence; otherwise the student will not be permitted to register again in the University without the consent of the University Faculty.

The course of training is that prescribed by the War Department as basic for infantry and field-artillery units (as elected) of the Reserve Officers' Training Corps. The infantry includes instruction in physical training, disciplinary drills, ceremonies, military courtesy, auxiliary weapons (machine guns, automatic rifles, 37 mm. guns, and trench mortars), indoor and outdoor rifle practice, pistol practice, topography and mapping, tent pitching and camp sanitation, signalling, bayonet combat, field engineering, field maneuvers, interior guard duty, and fundamental principles in minor tactics and leadership. The field artillery includes instruction in organization of the battery, customs of the service, military courtesy and discipline, individual equipment, pistol practice, hippology, gunnery, signalling, physical training, equitation and horsemanship, topography and reconnaissance, and motors.

2. **Elective Military Training.** Throughout the year. Credit two hours a term. Hours by assignment. New York State Drill Hall.

This is the advanced course prescribed by the War Department for units of the Reserve Officers' Training Corps, and includes three hours each week in the performance of the duty of officer or non-commissioned officer with organizations undergoing the training given under course 1, and two hours each week of theoretical instruction in preparation for such duties. Prerequisite, course 1.

Course 2 may be elected only by permission of the Dean of the College and the Professor of Military Science and Tactics, and at least the first four hours of registration will be counted in the twenty elective hours allowed outside the College of Agriculture (page 23). To enjoy the benefits offered by the Federal Government the student must agree to continue the course for four terms, and to attend a summer camp having a duration of about six weeks.

1. **Physical Training for Men Excused from Drill (Freshmen).** Throughout the year, three periods a week. Class and squad work and prescribed exercises. Mr. Auer and assistants.

2. **Physical Training for Men Excused from Drill (Sophomores).** Throughout the year, three periods a week. Class and squad work and prescribed exercises. Mr. Auer and assistants.

3. **Physical Training for Men (Juniors and Seniors).** Building-up and corrective exercises as prescribed by the medical examiners as a result of the physical examination required of all students in the University. Mr. ————.

4. **Boxing and Wrestling.** Instruction for a small fee at hours to be arranged. Messrs. Fallon and O'Connell.

5. **Swimming.** Instruction, M T W Th F 4–6. Mr. Bump.

6. **Physical Training for Women (Freshmen).** Throughout the year, three periods a week. Misses Bateman, Read, Ryan, Canfield, and Casho.

7. **Physical Training for Women (Sophomores).** Throughout the year, three periods a week. Misses Bateman, Read, Ryan, Canfield, and Casho.

The work of the two years consists of outdoor games and exercises from the beginning of the year to Thanksgiving, and from the Easter vacation to the end of the year. From Thanksgiving to Easter the work is in large part indoors, and consists of floor exercises, folk, aesthetic, and interpretative dancing, and indoor games, in all of which certain prescribed tests must be met at the end of each period.

For further information as to the required work in physical training, see the handbook issued by the department.

8. **Physical Training for Women (Juniors and Seniors).** Building-up and corrective exercises, as prescribed by the medical examiners as a result of the physical examination required of all students in the University. Miss Casho.

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Entered as second-class matter, December 14, 1916, at the post office at Ithaca, New York, under the Act of August 24, 1912.

Issued at Ithaca, New York, twice a month from December to June inclusive, and monthly from July to November inclusive.

This series of pamphlets is designed to give prospective students and other persons information about Cornell University. No charge is made for the pamphlet unless a price is indicated after its name in the list below. Requests for pamphlets should be addressed to the Secretary of the University at Ithaca. *Money orders should be made payable to* CORNELL UNIVERSITY.

The prospective student should have a copy of the

General Circular of Information

and a copy of one or more of the following Announcements:

Announcement of the College of Arts and Sciences.
Announcement of the College of Engineering.
Announcement of the College of Law.
Announcement of the College of Architecture.
Announcement of the New York State College of Agriculture.
Announcement of the Winter Courses in the College of Agriculture.

Announcement of the New York State Veterinary College.
Announcement of the Department of Chemistry.
Announcement of the Graduate School.
Announcement of the Summer Session.
Announcement of the Summer Session of the College of Law.
Announcement of the Summer School of Biology.
Program of the Annual Farmers' Week.
Annual Report of the President.

Special departmental announcements, a list of prizes, etc.

Other periodicals are these:

The Register, published annually in September, and containing, not announcements of courses, but a comprehensive record of the University's organization and work during the last year. Price, 50 cents.

Guide to the Campus. Illustrated. Price, 50 cents.

Directory of the University. Price, 10 cents.

The *Announcement of the Medical College* may be obtained by addressing the Cornell University Medical College, Ithaca, New York.

Correspondence regarding the Cornell University Official Publication should be addressed to

THE SECRETARY, CORNELL UNIVERSITY,
ITHACA, NEW YORK.